An Address

ON

THE TREATMENT OF SOME COMMON DISEASES OF THE SKIN.

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GENTLEMEN,—When your chairman, Dr. Redfern, did me the honour to invite me to address you on this occasion it occurred to me that it might perhaps be more acceptable if I put together some rough notes of certain methods of treatment which I have found useful in some of the commoner diseases of the skin, rather than that I should inflict upon you an elaborate essay upon some special subject. I must first of all apologise for the very fragmentary nature of my communication, and secondly I must disclaim any idea of particular orginality in the measures that I am going to recommend. Many of the remedies that I shall mention are as old as the hills and I dare say are well known to you, and others are merely modifications of methods of treatment recommended by others. I was once present when an eminent specialist deprecated the admission of general practitioners into a certain special society on the ground that he did not see why specialists should give themselves away or give away their "tips," unless for a special fee. Fortunately, some of us still believe that we belong to a scientific profession and are sufficiently imbued with the Hippocratic spirit to be above such contemptible small-mindedness. At any rate, most of us specialists are always ready to impart all we know—little though it may be—to any brother practitioner who may consider it worth his while to listen to us either at the hospital or elsewhere.

I propose on this occasion to speak particularly upon the treatment of the following common diseases—eczema, psoriasis, impetigo, acne, and ringworm.

ECZEMA.

That the numerous cases of cutaneous eruptions which are included under this name have more than one pathological cause most dermatologists are agreed. There can be no doubt, however, that the ubiquitous microbe is at the bottom of many of them, and it is to my mind more than probable that there is more than one microbe the growth and development of which in the skin will produce the inflammation, irritation, exudation, and exfoliation which are more or less characteristic of "eczema."

As with other microbic infections, moreover, another factor is necessary for the production of the disease: the micro-organisms will not flourish if the soil or cultivating medium—i.e., the tissues and juices thereof—be not suitable. Some of the modern dermatologists, especially on the continent, are, I fancy, rather inclined to ignore this latter factor and to depend too much upon purely external applications in the treatment of eczema. On the other hand, there can be no doubt that the older practitioners relied too much on internal medication in this and in many other diseases of the skin. I feel sure that in most cases the best results are obtained by simultaneous external and internal remedies Our aim should be to get the whole system—all the organs of the body—in a thoroughly healthy condition as well as to destroy the microbes or prevent their growth, and we must see to the digestion, to constipation, to the kidneys, to the circulation, and even to the nervous system—to everything, in fact, which may directly or indirectly influence the condition of the tissues and fluids of the skin.

I frequently give with benefit an iron and magnesia mixture—e.g., the mistura ferri aperiens of most hospital pharmacopœias—with a little nux vomica as a digestive tonic, or sometimes an alkaline bitter mixture with an aperient if necessary, and if able I regulate the diet as far as possible. As a rule I recommend simple, plainly-cooked food, the avoidance of much sugar, tea, strong coffee, pastry, cheese, beer, acid and sweet wines, or much alcohol in any form. Externally, the applications will vary with the form of the eczema, its acuteness, extent, position, &c. In acute inflamed cases, antisepsis, protection, and reduction of inflammation and exudation are to be aimed at, and either powders, pastes, liniments, ointments, or zinc gelatins may be employed. Many cases do well with what we at Blackfriars call the "unguentum hydrargyri cum plumbo," which contains 10 grains of acetate of lead, 10 grains of calomel, 20 grains of oxide of zinc, 20 grains of ointment of nitrate of mercury, and one ounce of vaseline. But occasionally an eczematous skin will not stand an ordinary ointment, and a modification of Lassar's paste may then be tried—e.g., three drachms each of zinc oxide and starch, 10 grains of salicylic acid, and one ounce of vaseline, or a calamine liniment containing one drachm of carbonate of zinc and half an ounce each of olive oil and limewater. When the weeping and inflammation are excessive a powder thickly dusted on is sometimes effective—e.g., half an ounce of starch, two drachms of oxide of zinc, and one drachm of powdered borax or boric acid. Many cases of acute eczema which have resisted other applications have yielded in my hands to the zinc-gelatin treatment (of Pick and Unna)—viz., half an ounce of gelatin, three drachms of oxide of zinc, one ounce of water, and half an ounce of glycerine, and I generally add 10 minims of ichthyol. The mass melted in a glue-pot and painted over forms an elastic, protective, and soothing covering. In all cases, immediately before applying any of the above, I order the parts affected to be well bathed with a very dilute antiseptic lotion. In preference I use a lotion containing half a drachm of creolin to a pint of soft boiled water, because it is effective as an anti-pruritic as well as being an antiseptic and—an element of importance in hospital practice—because it is inexpensive. Other weak antiseptic lotions are no doubt equally as good.

In dry eczemas and where there is but little inflammation, tarry ointments are usually very efficacious. Our favourite one at Blackfriars is the so-called "unguentum petrolei compositum." This contains half a drachm of alcoholic solution of coal tar, 10 grains of ammoniated mercury, and an ounce of vaseline. Creolin is sometimes with benefit substituted for the alcoholic solution of coal tar and I dare say that the liquor picis carbonis would also do.

As with the acute eczemas I always advise bathing the parts affected with a weak tarry lotion before applying the ointment night and morning, or even, if the eruption be extensive, a tepid bath containing from half a drachm to one drachm of creolin or other tar product to about six gallons of water. Soap is generally detrimental in eczemas, especially in the acute form, and I frequently recommend a muslin bag filled with bran to be used as a substitute. A warm sitz bath night and morning with rather more creolin in it—say one drachm to two gallons—I have found very useful in obstinate cases of eczema of the perineum and anus. In these cases, too, I have sometimes found the addition to the tar ointment of 10 grains of sulphur or 25 grains of ichthyol to be of good effect. This is applied immediately after the bath.

In eczemas of the limbs I keep the ointment bandaged on, and I am sure that careful bandaging of the legs from the foot to the knee is an important adjunct to the treatment, especially when varicose veins are also present, as they often are. There is one matter that I should like to point out in the treatment of eczema. It is a mistake to use strong ointments—a fact that, I believe, was first recognised by the elder Startin, the founder of Blackfriars Hospital for Diseases of the Skin, and which has not yet been grasped by the editors of the British Pharmacopœia, for the officinal ointments therein set down are mostly too strong in skin cases.

PSORIASIS.

Although I regard the constitutional element in psoriasis of even more etiological importance than in eczema, seeing as we do among its other features its tendency to occur in several members of the same family, and in gouty and rheumatic subjects, I have come to the conclusion that external treatment is, comparatively even, of much greater use in this disease. As with eczema we ought to consider the state of the internal organs as well as any "diathesis" which may be indicated. I believe that the older practitioners were often right in giving alkalies and diuretics in these cases, but I have long become convinced that there is

no particular drug administered internally which can fairly be regarded as a specific for psoriasis. As for arsenic, I consider that its vaunted specific efficacy in the treatment of this disease is little short of a medical myth. I could produce notes of numerous cases in which its persistent exhibition for years has produced no effect either in removing the efflorescence, or in preventing its recurrence after its removal by external treatment. If, as perhaps happens occasionally, the patches disappear during a prolonged course of the drug, it has only been, according to my view, either after the patient has been made very ill, the nutrition of all the tissues having suffered—the skin with its patches of psoriasis along with the rest—or from the effect of concomitant measures. We frequently, indeed, see the efflorescence of psoriasis temporarily vanish during some other intermediate severe affection—gastritis, fevers, influenza—and I have even seen the spots go when a patient has meanwhile contracted syphilis.

Thyroid gland is another much vaunted drug which I have also discarded in the treatment of psoriasis. Some years ago I tried it extensively in the disease, and came to the conclusion that although in a few cases it undoubtedly caused the exfoliation and disappearance of the spots, in the majority it had no effect, and, indeed, frequently made the patients very ill without doing much good to the psoriasis. Even in those cases in which the results were good the rapidity of cure was by no means greater than with the ordinary external methods of treatment, nor was there any less tendency to recurrence. The external application of chrysarobin undoubtedly removes the efflorescence quicker than anything else. As an ointment, however, it has its drawbacks—ruining the patient's clothes, and producing severe and disagreeable erythema in tender parts and inflammation of the eyes if accidentally carried thereto. I use it now always in the form of a solution, to be rubbed in only on the patches which are situated on the extensor surfaces where the skin is less tender—e.g., 40 grains of chrysarobin, 10 grains of salicylic acid, and one ounce of solution of gutta-percha (in chloroform), this forms a film which, when dry, does not stain the linen. As it peels off it is to be replaced every day or two—generally until an erythematous blush appears around. A more or less saturated solution of chrysarobin in benzine, rubbed into the patch, and then when dry painted over with collodion or the liquor gutta-percha is also very effective. For other parts of the body I usually order a strong tar or creolin ointment—e.g., one drachm of creolin, 10 grains of ammoniated mercury, and an ounce of vaseline, often also with the addition of from 10 to 20 grains of salicylic acid. If possible I make the patients soak themselves for a quarter of an hour or 20 minutes every night in a warm bath containing creolin and then thoroughly inunct the patches with the ointment.

For psoriasis of the scalp, the most efficacious treatment in my experience is an ointment containing a drachm of ammoniated mercury and three and a half drachms each of soft soap and vaseline to be well rubbed in every night. By these measures thoroughly carried out the most inveterate cases can, I believe, be "cured" in a few weeks; and I am not aware that the affection then shows more tendency to recur than after any other method of treatment. Indeed, I know several old patients who were so treated who have had no return of their psoriasis for many years.

IMPETIGO.

Everyone who visits the out-patient department of the West London Hospital is surprised at the enormous number of cases of impetigo that we see there and I have no good explanation of the fact that the disease is so prevalent in Hammersmith and the neighbourhood. In most skin clinics the cases of eczema are by far the most numerous; at Hammersmith the impetigo cases certainly predominate. Fortunately it is a disease easily cured and by the good old-fashioned remedy—ammoniated mercury ointment.

I do not approve of the crusts being removed by poulticing. Warm oil or a weak, warm antiseptic lotion ought to be sufficient. I generally order a weak creolin lotion for this purpose, the ointment to be applied immediately afterwards and re-applied night and morning. If pediculi are present, as is usually the case in the heads of our London School Board children, I recommend a thorough nightly washing with soft soap and hot water immediately before applying the ointment. If this treatment be kept up for some weeks the young pediculi are dealt with as they come forth from the nits and the pediculosis is soon eradicated.

ACNE.

This is another common affection which in my experience can be cured with certainty and in a comparatively short time by a judicious combination of internal and external remedies. I believe that unless the skin is in a more or less unhealthy state the pus and comedo-producing organisms do not perform their nefarious function. The majority of acne patients will give some indication of dyspeptic trouble, constipation, &c., and the rosaceous cases particularly of flushings of the face, &c., and not infrequently they give a history of their faces being worse at the menstrual period. Most of them I find to be benefited by the tonic and aperient iron and magnesia mixture between meals, others by an alkaline bismuth mixture before food. In all cases I recommend the application to the spots every night of the compound sulphur ointment of Blackfriars which contains 30 grains of sulphur, 10 grains of ammoniated mercury, 10 grains of sulphide of mercury, and an ounce of vaseline, slightly varying the quantities in particular cases and adding oxide of zinc if there be much inflammation. Occasionally the old sulphur and lime-water lotion does well, but I find as a rule that the above ointment does better. Before its application I make the patients bathe the face with hot water and a 10 per cent. ichthyol soap well lathered on. This is to be done again in the morning and very often I tell them to keep the lather on for as long as possible. But a still more important part of the treatment, in my opinion, is the cautious application to each pimple of the tiniest driplet of pure carbolic acid, just liquefied with a little water, as recommended many years ago by Dr. Walter Smith of Dublin. As a rule, one application aborts and cures the pustule. The rapid efficacy of this application is particularly apparent in those very bad cases of recent alcoholic acne. In indurated cases where subcutaneous abscesses have formed and where the pustules are large and deep I puncture them, and with a small blunt-pointed hypodermic syringe needle, with the orifice apical. I thoroughly wash out the cavity with some antiseptic lotion—1 in 1000 sublimate, 1 in 20 carbolic, izal, or chinosol. I do not think it matters much which—in fact, I treat it as one would treat antiseptically an ordinary surgical abscess. I think it always well to remove as many comedones as possible in acne cases, and for this I use the comedo extractor which has been made for me by several London instrument makers.

RINGWORM.

As we all know, many cases of ringworm of the scalp can be easily cured by the application of iodine tincture and liniment, Costa's paste, turpentine, or even common ink. When, however, the fungus gets deep down into the hair follicles it is not so easy to get at, and the case even in the most experienced hands may last for years. During the past 15 years I think I have experimented with most of the methods, and the number is legion, that have been proposed for the treatment of ringworm. I am now advising the following measures in the majority of cases. The scalp to be shaved every fortnight and calico skull caps to be worn day and night, an ointment consisting of one drachm each of pure carbolic acid and salicylic acid to the ounce of vaseline to be well rubbed in with a stiff brush night and morning over the patches, and the rest of the scalp slightly smeared over with the same ointment. Twice a week I have the scalp lathered with hot water and a soapy mixture containing two ounces of soft soap, two drachms of glycerine of carbolic acid, and two drachms of glycerine of boric acid, to be followed immediately by an application of the ointment. Once or twice a week, if possible, I use immediately after the washing my special pump which forces in by the atmospheric pressure any parasiticide liquid which you may wish to use. The area of scalp beneath the bell simply becomes impregnated with the fluid, making the soil very unpleasant at least for the undesirable trichophyton. I generally employ pure creasote and sometimes equal parts of ozonic ether and guaiacol which penetrates readily. Before using this machine it is as well to remove as much fat as possible from the follicles by swabbing the patch with ether. Many cases that have resisted other methods of treatment for years have in my hands yielded to this.

CONCLUSION.

I think, gentlemen, that I have now wearied you enough, but before concluding I should like to express my opinion

that we are in this country in a great degree handicapped in the treatment of diseases of the skin from the fact that we cannot always have the various necessary measures thoroughly carried out. It may be all very well for the hospital patients and for very wealthy people who have the time to devote and who can afford to go to the West End nursing homes. In a large number of cases, however, the initial prescription and the occasional visit to the skilled practitioner are deemed sufficient; the circumstances of the patient's home rarely lend themselves to thorough inunction, suitable baths, &c., and, indeed, are seldom adequate, and the result often is that the case "hangs fire." The continental patient suffering from a disease of the skin is, on the other hand, better off. He goes to an experienced special practitioner who admits him into his private hospital at a cost varying according to his means, is seen and dressed every day by the practitioner himself or by his assistants, with frequent modifications of treatment as indicated, and I am obliged to admit is often cured quicker and more satisfactorily than he would be in this country. I have myself more than once—an admission which I regret to have to make—felt constrained to send patients who were above the hospital class to Aix la Chapelle, to Hamburg, and to other places abroad, because I conscientiously knew that their cases would be more thoroughly dealt with and at less expense than in a London nursing home. I have only now to thank you for listening to these very desultory remarks. I hope, however, that some of the measures which I have mentioned may prove of use to some of you.

THE ETIOLOGY OF RHEUMATIC FEVER.

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THE etiology of rheumatic fever has proved to be a problem of such complexity that it is necessary to state at the very outset of this paper the scope and object of the research. The various results that had been already obtained by investigators were in themselves our first difficulty, for they necessitated the employment of widely different methods to enable us to cover the ground already traversed. Our first intention was to obtain, if possible, some definite facts from which as a basis we might make further advances, and the discovery and isolation of micro-organisms in the form of diplococci in eight successive cases of rheumatic fever afforded us this opportunity. When we had obtained these diplococci in pure culture Mr. H. G. Plimmer undertook a series of inoculations into animals and the results that followed provided us with further data. Finally, microscopic investigations of the human and animal tissues have been another source from which we have obtained facts which we believe to be of considerable importance. The methods that have been used and the conclusions that have been obtained from these three sources are detailed in this paper, together with a brief historical survey of the work of others upon this subject.

There are many points of interest that are suggested by these results; but the most important fact deducible from our researches, as detailed below, is *that this diplococcus which we have isolated is a cause of rheumatic fever*. It is to this conclusion that our results seem irresistibly to lead. We are not, however, in the face of the results of others, in a position to state that these diplococci are invariably present in rheumatic fever, nor are we able to claim that they are the only cause of this disease.

AN OUTLINE OF THE HISTORY OF THE BACTERIOLOGY OF RHEUMATIC FEVER.

Before giving an outline of our results a historical survey of the subject is appended sufficient to indicate the various views that are, and have been, held, and to do justice to others who have made investigations upon this question. This outline cannot claim to be exhaustive, but it does, we hope, give due credit to those who have already expended much labour in attempting to discover the true cause of rheumatic fever. In 1892 Fraenkel[1] called attention to a paper by P. Guttmann upon the etiology of rheumatism and its complications. Guttmann described a case of very acute rheumatism with exudative pericarditis complicated by abscesses in the kidneys and muscles from which the staphylococcus pyogenes flavus was isolated. This micro-organism was obtained from the pericardial exudation and the abscesses but not from the joints. Guttmann expressly stated that this was not a case of true rheumatism, nor did he consider this organism, if it were the cause of the rheumatism in this case, to be the sole cause of rheumatic fever. Leyden also concurred with this opinion. In the same year Sahli[2] discovered the staphylococcus pyogenes citreus in the synovial membrane of the joints in a case of rheumatic fever and also in the pericardial exudation. He considered rheumatic fever to be due to a staphylococcus infection but left it an open question as to whether or not the condition was due to an attenuation of the organism. Netter[3] also isolated a streptococcus from a case clinically resembling rheumatic fever but following acute suppurative otitis media. Lanz[4] in 1893 published a paper upon experimental results connected with suppurative polyarthritis. From the pus of an abscess of the brain operated on by Kocher he isolated a bacillus. This on intravenous injection into rabbits caused death in 23 days. Suppurative polyarthritis resulted and the bacillus was again isolated from the joints. To this organism he gave the name of bacillus pyogenes fœtidus liquefaciens. In 1894 Maragliano[5] obtained diplococci and staphylococci from a case which commenced clinically as rheumatic fever and ended as a septicæmia. This writer also insisted upon the relationship between rheumatic fever and suppurative affections. At this time Chvostek[6] and Singer[7] published papers upon the micro-organisms found in the urine of patients suffering from rheumatic fever. Singer found as the result of the examination of the urine in 17 cases that the staphylococcus pyogenes aureus was frequently present, and when present was to be found in considerable numbers, but became less as the disease declined. He associated this occurrence with the rheumatic process. Chvostek, though recognising the importance of Singer's investigation, doubted the validity of his conclusions. Dana[8] in 1894 isolated a diplococcus from a case of chorea following rheumatism. The organism was found in the meninges of the brain and spinal cord. Charrin[9] found streptococci in cases of rheumatic fever. Sacaze[10] made the interesting suggestion that some external wound, often insignificant, might be the site of infection in rheumatic fever. In 1896 Lubarsch,[11] in a paper upon the streptococcus group and the diseases caused by them, alludes to an exhaustive paper by Buss of Bremen upon the relation of angina faucium to rheumatic fever. Buss[12] in this paper came to the conclusion that the throat and intestines are in many instances the sites of the entrance of the rheumatic infection.

The clinical importance of the angina faucium that occurs in rheumatism had long been recognised. It was mentioned by Trousseau[13] in his "Clinical Medicine" and Dr. Kingston Fowler[14] in 1880 published an account of 20 cases of acute rheumatism ushered in by tonsillitis; Dr. Cheadle[15] further insisted upon this clinical fact in 1888 in the Harveian Lectures upon the rheumatic state in childhood.

Achalme[16] introduced a new field for investigation by a series of papers upon the bacteriology of rheumatic fever dating from 1891. He discovered a bacillus in the blood of patients who succumbed to rheumatic fever and by his subsequent researches confirmed this observation. His results

[1] Deutsche Medicinische Wochenshrift, No. 46, p. 809.
[2] Etiology of Acute Rheumatism, Correspondenzblatt für Schweizer Aerzte, 1892, vol. xxii.
[3] La Semaine Médicale, 1892, No. 7, p. 48.
[4] Experimental Bacillary Suppurative Polyarthritis, Centralblatt für Bacteriologie, 1895, Band xiv., p. 269.
[5] Infections from the Pyogenic Micro-organisms, Riforma Médica, 1894, Nos. 67 to 68.
[6] Verhandlungen des Congresses für Innere Medicin, 1897, p. 99.
[7] Wiener Klinische Wochenschrift, 1894, No. 26, p. 449.
[8] The Microbic Origin of Chorea, American Journal of Medical Science, 1894, p. 31.
[9] La Semaine Médicale, 1894, p. 376.
[10] The Rôle of the Staphylococcus in Acute Articular Rheumatism, Archives Générales de Médecine, 1894, p. 513.
[11] Pathology, 1896.
[12] Deutsches Archiv für Klinische Medicin, 1894, vol. liv., p. 1: The Bacteriology of Acute Rheumatism.
[13] Clinical Medicine, vol. ii., p. 466.
[14] THE LANCET, Dec. 11th, 1880, p. 933.
[15] Harveian Lectures on the Rheumatism of Childhood, 1888.
[16] Comptes Rendus de la Société de Biologie, 1891.

are of such importance that some space must be devoted to an account of them. The bacillus resembled that of anthrax both in size and in the blunt ends, but varied considerably in size though not in thickness in different media. It occurred in the blood in scanty numbers and was grown anaerobically, not aerobically. A mixture of milk and beef-tea was the medium used, but it grew well upon alkaline bouillon made from horses' flesh. The anaerobic tubes were not opened for from eight to ten days. Solid media were not well adapted for studying the properties of this bacillus. When growing in alkaline bouillon gas bubbles and a turbid deposit appeared within 12 hours. The bacillus stained well with all the aniline dyes but best with faintly alkaline methylene blue. In 1897 Achalme[17] published a detailed account of his researches upon this bacillus with clinical histories of nine cases in which it had been found. The results of injections into animals were also given. Sanious exudation at the sites of inoculation was a prominent feature and in the most severe cases death occurred from septicæmia. A true picture of rheumatic fever, as it occurs in man, did not appear to result in animals thus infected. The results that Achalme obtained have naturally aroused considerable interest, and it is remarkable that an organism of such a size and one that stains so well should have been overlooked by those who have investigated the tissues in rheumatic fever.

Thiroloix,[18] following Achalme's investigation of this bacillus, fully confirmed his results in a series of papers. In addition, in five cases of rheumatism he obtained this bacillus and inoculations into rabbits gave the entire picture of rheumatic fever. Again, he obtained the organism from the blood and pleural effusion in one case of rheumatic fever, and this produced in guinea-pigs sanious exudations and in rabbits a heart but not a joint inflammation. In two later cases he obtained the latter also. Triboulet[19] in a case of rheumatic fever found a bacillus resembling that described by Achalme. But later Triboulet and Cuyon[20] found a diplococcus in five cases. In two of these the diplococci were associated with Achalme's bacillus, and they argue that severe and complicated cases are due to Achalme's bacillus together with the associated diplococci, whereas the simple cases of rheumatism are due to the diplococci alone. Riva[21] in 1897 isolated a specific micro-organism from eight cases of rheumatic fever. The organism varied much in shape in different media and occurred in both coccal and bacillary forms. He made use of a complicated medium slightly acid in reaction, an essential constituent of which was the synovia from the joints of horses. In 1898 Apert and Triboulet[22] obtained some remarkable results by the inoculation of a rabbit with a diplococcus isolated from the blood of a patient suffering from rheumatic fever. 20 days afterwards they found thickening of the mitral valve with hypertrophy and dilatation of the chambers of the heart and excess of clear fluid in the pericardium. There was also pleurisy but no peritonitis. None of the joints were affected. This diplococcus was identical in character with that found in 11 other cases of rheumatic fever. In spite of the absence of any joint lesions Triboulet considered this organism to be specific. Injected under the skin Apert found the diplococcus produced a local induration. Bettencourt[23] in 1898 supported the researches of Achalme and Thiroloix. Gustav Singer[24] in a monograph gave the results of an extensive investigation of many cases of rheumatic fever and was led to the conclusion that acute rheumatism is not a specific disease but owes its origin to streptococcal and staphylococcal infection. In 1889 Kronenberg,[25] in a paper upon angina faucium in acute rheumatic fever, expressed doubts that rheumatism is a disease *sui generis*, but he thought rather that it was a peculiar reaction of the joints and other tissues to a series of bacterial influences—as, for example, the gonococcal, the streptococcal, and the allied infections. In 1899 Westphal, Wassermann, and Malkoff published a paper, "Ueber den Infectiösen Charakter und den Zusammenhang von Acutem Gelenkrheumatismus und Chorea."[26] Westphal narrated the history of the case from which the material was obtained. It was a severe case of chorea that followed acute rheumatism, occurring in January, 1899. Violent delirium with hyperpyrexia and collapse resulted in death on Feb. 24th. The necropsy a few hours later showed minute vegetations upon the mitral valve and parenchymatous nephritis; there was no suppuration. Cultures were made from the heart's blood, pericardial fluid, mitral valve, spleen, and brain. Wassermann, after alluding to the researches of Löffler, Michaelis, Eberth, Litten, and von Leyden, described the bacteriological results. A diplococcus resembling morphologically that found by Von Leyden in rheumatic valvulitis was isolated and in 80 rabbits produced fever and multiple arthritis. This organism appeared as a diplococcus in the tissues but grew in culture as a streptococcus. The number of micro-organisms in the tissues of the patient was very small. It required a higher degree of alkalinity than that of the ordinary media, upon which it refused to grow. The incubation period was from three to ten days. All the tissues of the joint were inflamed and in the fluid of those which had been affected longest there was a considerable number of leucocytes. In addition there was exudation in the tendon sheaths and bursæ. The micro-organism was found in the arthritic exudation and cultures from the animals reproduced the disease in other animals. Litten[27] at the same date isolated from a malignant form of rheumatic endocarditis (non-suppurative) a very minute streptococcus which was fatal to mice and guinea-pigs but rapidly lost virulence upon culture. In a footnote to his paper he is of opinion that Westphal and Wassermann have probably found the true excitant of acute rheumatism but suggests that there may possibly be more than one. It appears to us that this diplococcus must resemble, if not be identical with, that investigated by Triboulet in 1897.

This brief survey is sufficient to show how complicated and uncertain the present position of the bacteriology of rheumatic fever still remains. In the following short analysis of the various hypotheses we hope to make clear that view of the subject which seemed to us the most probable and to indicate the direction in which our researches tended. There may be some who still decline to regard rheumatic fever as a microbic disease, but we have started upon the assumption that it is an infection, being led to this conclusion by the results of clinical and pathological experience and teaching. The broad clinical view of rheumatism which has been taken by such authorities as Dr. W. B. Cheadle, Dr. Thomas Barlow, Dr. D. B. Lees, and Dr. A. Garrod in this country appears to us to support this hypothesis very strongly.

View No. 1.—Allowing that the cause of rheumatic fever is microbic, one view that has met with considerable support maintains that there is no specific micro-organism, but that rheumatism is but a form of septicæmia which owes its origin to staphylococcal and streptococcal infection. The close analogy between the rheumatic processes and those of pyæmia and the frequent discovery of staphylococci and streptococci in cases of rheumatic fever have naturally led to this view. It is undoubtedly a very important one and involves bacteriological and clinical problems of the greatest difficulty. It raises the question of what is really the definition of the specificity of an organism and deals with what is still an unknown quantity—viz., the extent of variability that is possible in a micro-organism and its results under varying conditions of virulence and resistance. We have fallen back upon the teaching of clinical medicine and pathology as our guide in this matter. Rheumatic fever as we meet with it in England is a common disease with, on the whole, very definite characteristics. However virulent the disease it may be practically asserted from the clinical standpoint that suppuration does not occur. Many cases die in the course of a year with acute cardiac inflammation, yet the heart and other viscera are not in a condition of suppuration. We were inclined to expect that an organism the cause of rheumatic fever if isolated and inoculated into suitable animals would produce in them a condition resembling the

[17] Sur le Rhumatisme Articulaire Aigu, Annales de l'Institut Pasteur, 1897.

[18] The Results of Inoculation of a Bacillus obtained from a Patient with Rheumatic Fever, La Semaine Médicale, 1898, p. 376; The Microbe of Rheumatic Fever, ibid., p. 420; The Bacteriological Examination of the Blood in Two Patients with Rheumatic Fever, Comptes Rendus de la Société de Biologie, 1898, p. 263; A Bacteriological Study of One Case of Rheumatic Fever, ibid., No. 30, p. 882; The Bacteriology of Rheumatic Fever, ibid., No. 34, p. 945.

[19] Comptes Rendus de la Société de Biologie, 1898, tome v., p. 214.

[20] Bulletin et Mémoire de la Société Médicale des Hôpitaux, 1898, p. 93.

[21] Centralblatt für Innere Medicin, 1897, Band xviii., p. 825.

[22] Comptes Rendus de la Société de Biologie, 1898, Band v., p. 128.

[23] Archives de Médecine, tome ii., No. 298.

[24] Aetiologie und Klinik des Acuten Gelenkrheumatismus.

[25] Angina in Acute Rheumatism, Münchener Medicinische Wochenschrift, 1889, p. 23.

[26] Berliner Klinische Wochenschrift, 1899, No. 29, p. 638.

[27] Ueber die Maligne (Nichtseptische) Form der Endocarditis Rheumatica, Berliner Klinische Wochenschrift, 1899, No. 29, p. 644.

rheumatic fever of man in the absence of multiple foci of suppuration. That this limit may be overstepped both in man and animals under exceptional, and perhaps as yet unknown, circumstances seemed to us very probable, but the general and average result that we expected was a condition in which the absence of suppuration would be a prominent feature.

View No. 2.—Another view maintains that the cause of rheumatism is a specific diplococcus. It is to this view that we inclined, though we would repeat once more that the definition of what is meant exactly by "specific" involves many difficult problems concerned with the virulence of the infection and nature of resistance.

View No. 3.—A third view maintains that the cause is a specific bacillus. This view is a decidedly simpler one, if it were proved to be true. If the bacillus, as, for example, that described by Achalme, be found to be invariably present in rheumatic fever it is easily distinguishable from the staphylococci and streptococci that are found so frequently associated in rheumatism, and its morphological characters alone would be of the greatest assistance in establishing the truth of its claim.

View No. 4.—A fourth view raises the question of a mixed infection of bacilli and cocci, an analogy to which is readily supplied by diphtheria. To us this view appeared one of great difficulty and withal unsatisfactory. There can be no reasonable doubt in the face of the numerous investigations that have been made that cocci of some form or other are frequently present in rheumatic fever and hence the origin of such a view as the one under consideration. Nor can there be reasonable doubt that cocci are capable ot producing polyarthritis, valvulitis, pericarditis, pyrexia, sweating, infarction, and other manifestations closely resembling those of rheumatic fever. If, then, both the bacilli and cocci are needful to produce rheumatic fever the association must be a mysterious one. If the cocci are the cause of the symptoms it is possible that they are restrained from causing suppuration by the presence of the bacilli. If the bacilli are the cause of the symptoms it is possible that they produce them only when associated with these cocci, though this is difficult to realise when it is remembered that these cocci may themselves produce almost similar lesions.

View No. 5.—This last view holds that rheumatic fever is not a disease *sui generis* but a particular reaction of the tissues to varied infections. We thought that the remarkable constancy of the clinical symptoms of rheumatic fever, as met with certainly in England, were much against its being a condition that would result from many and varied infections.

Not only is there this diversity of opinion regarding the organism, but opinions differ also as to the explanation of the way in which the symptoms are caused. Does the micro organism remain localised to one spot—for example, the tonsils—and pour its toxins into the system, giving rise in this way to carditis, arthritis, nodules, and other local lesions? or is it widely distributed and present in the local lesions? We inclined to the belief that the organism was to be found in the local lesions, though perhaps only with great difficulty. The probability of its occurrence at these sites seemed to us to be indicated by the analogy of pyæmia.

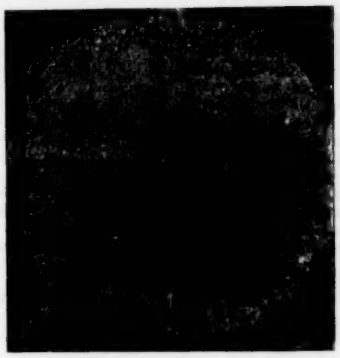
To summarise our point of view at the start of this investigation we thought it most probable that the organism would always be present in cases of rheumatic fever; that it would be capable of isolation; that it would produce the symptoms of rheumatic fever in a suitable animal; and that it would probably exhibit some definite peculiarities upon culture. We also thought that it would be present in the local lesions and that the infection would be a simple and not a mixed one. The analogy that there appears to be between rheumatic fever and septic infections pointed to the infection being coccal rather than bacillary. We were, however, naturally influenced by the positive results of Achalme and his corroborators, and their results appeared to us so definite that we gave especial attention to the discovery of this bacillus in our earlier cases.

THE OUTLINE OF THE INVESTIGATION.

After this brief consideration of these various theories we give in outline the results of our investigation, then in detail the methods, cases, and bacteriological investigations, and finally a short summary of the facts which have been established, with some concluding remarks.

In January, 1899, we undertook the study of the bacteriology of rheumatism with the intention of confirming, if possible, the results obtained by Achalme. For some long time we were influenced by this intention, but finally abandoned the attempt, having failed to obtain a bacillus morphologically resembling anthrax either in culture or in the tissues. On the other hand, we obtained later in eight successive cases a diplococcus which grew in liquid media in streptococcal chains. This organism did not thrive upon ordinary agar or serum agar, and though we were able to grow it eventually upon blood agar it appeared to grow best in a liquid medium of milk and bouillon rendered slightly acid with lactic acid. Upon three occasions we isolated the organism in pure culture from the blood of patients during life who were suffering from acute rheumatic pericarditis. It was also obtained from the pericardial fluid after death and from the valves and lastly from the throat of a rheumatic patient. In our first two cases we did not investigate the characteristics of the diplococcus and in one recent case it was associated with numerous small bacilli. In one case a sarcina was present as a contamination. In five of the eight cases it was in pure culture. When we became acquainted with the researches of Wassermann, Westphal, and Malkoff, it seemed clear that this was the organism they had described, and we feel no doubt that it is identical although there have been certain differences in the results that we have obtained. As stated above, we succeeded best in cultivating it in an acid medium and have not had success with a strongly alkaline medium, as recommended by Wassermann, though we are in doubt as to the exact degree of alkalinity that Professor Wassermann found to be most suitable, about which point he made no definite statement of which we are aware. It is of considerable interest that we succeeded in growing the diplococcus on two occasions in the pericardial exudation and noticed in one of these instances an increase in flakiness of the fluid. On both these occasions the pericardial fluid was distinctly acid, so that there is this proof that the organism will grow in an acid medium. The demonstration of these diplococci in films from the pericardial fluid after incubation is very definite, and we have also found them in scanty numbers in films from recent vegetations, from unincubated pericardial fluid, from blood from the heart wall, and from the throat. Their demonstration in the tissues is by no means easy. We have, however, demonstrated them unmistakably in the tissue of a rheumatic nodule and in the valves, pericardium, and tonsil. Mr. H. G. Plimmer undertook a series of inoculations for us from the pure cultures that had been obtained and made intravenous inoculations into rabbits with results of which the following is an outline (Fig. 1).

FIG. 1.



Micro-photograph of the diplococci from a culture upon blood-agar. The micro-organisms are arranged in small groups. The individual coccus is extremely minute, averaging 0·5 μ. × 2100 times.

The pericardial fluid from Case 4, that of a boy who had died from an exacerbation of rheumatism, gave the first positive result. Three days after inoculation the animal limped upon the left fore leg, the left shoulder-joint was swollen, and the animal had lost flesh. Later the right hip-joint and right shoulder-joint became affected, wasting continued, and the rabbit died 10 days after inoculation. The post-mortem examination showed excess of clear fluid

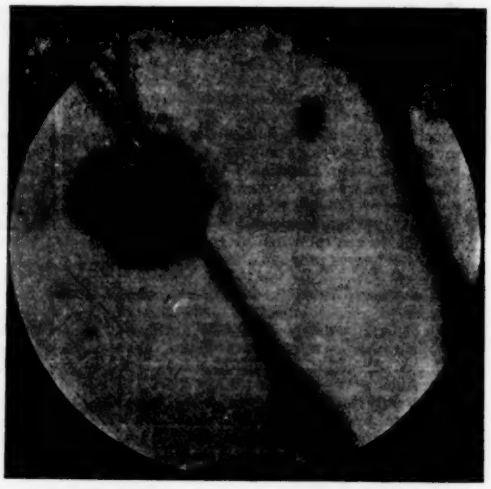
in the right shoulder-joint and right hip-joint with reddening of the cartilages. The left shoulder-joint contained an opaque fluid which microscopically contained numerous endothelial cells and a few leucocytes. The heart appeared larger than natural, there was an excess of clear fluid in the pericardium, but apparently no evidence of pericarditis or endocarditis. The liver was dark red. In the lungs there were patches of broncho-pneumonia. There was no sign of abscess formation in any of the viscera. The clear fluid from the joints, taken with every precaution, was inoculated into milk tubes. Films were also made and a diplococcus was demonstrated and cultivated from this clear fluid. It was also demonstrated in the mitral valve (Fig. 2). Thus it will be seen that in

FIG. 2.

Micro-photograph showing the diplococci in the tissues. From a section through the mitral valve of a rabbit with early valvulitis. The valve showed the earliest evidences of a morbid change. The micro-organisms lay beneath the endocardium in the substance of the valve. The connective tissue cells of the valve had commenced to proliferate, giving rise to a slight projection upon the surface. The arrangement of the diplococci in small groups is somewhat characteristic. × 2100 times.

some respects our results in this case corresponded exactly with those of Wassermann. A polyarthritis had resulted and the joint first affected contained a fluid in which there were fibrin and some excess of leucocytes, the cartilages of the affected joints were redder than normal, and in none of the viscera were there any foci of suppuration. In one respect there was a difference and this was an important one: we had demonstrated the organism in the mitral valve. A second rabbit was inoculated from a culture of the joint fluid. The cultivations upon six blood agar tubes were injected intravenously into this rabbit with the following results. Upon the third day the right knee-joint swelled and the animal had lost 160 grammes in weight, then followed in succession the other knee-joint and the left shoulder-joint, and finally all the larger joints became implicated. The identity of the course of the disease with that in the first case was remarkable and certain further results developed. 17 days after the inoculation a systolic murmur was detected at the base of the heart somewhat superficial in character and the heart was acting with great rapidity. This murmur was detected for two days and then was lost and at the same time the heart sounds became faint. We diagnosed pericarditis with subsequent effusion. The next day the animal died. During the last week of the illness all the joint swellings had disappeared except that of the right knee. The necropsy showed an excess of clear fluid in the pericardium and a fibrinous coagulum in the sac with some roughening of the visceral layer over the large vessels. The right knee was full of an opaque fluid which, as in the first case, contained the diplococci, endothelial cells, and leucocytes. There was some excess of fluid in the other joints but this was clear. Upon the mitral valve there were two small white opacities resembling an early granulation. The liver was dark red and contained some small white areas which were quite firm and slightly raised. The spleen and kidneys were pale but otherwise natural. The tonsils were natural. Microscopic examination of the mitral valve did not confirm the suspicion of valvulitis. The opaque patches in the liver proved to be localised areas of coagulation necrosis. There was no trace of suppuration in the viscera. The myocardium showed well-marked fatty changes in the fibres comparable to the changes demonstrated by one of us (F. J. P.) in the human heart as occurring frequently in acute rheumatic carditis. The culture of the organism was repeated as before and the cultivations upon three tubes injected into a third rabbit, but with a negative result. The cultivations upon six tubes injected into a fourth rabbit resulted as follows. Four days after the inoculation the right knee-joint swelled and subsequently the right carpal joint and left knee-joint also and there was general wasting. Upon the tenth day we detected a soft murmur which next day we localised as mitral; this disappeared, but on the fourteenth day there was a murmur upon the right side which we diagnosed to be tricuspid in origin. The confirmation of these diagnoses being a matter of great importance upon the same day that the tricuspid murmur was detected the animal was killed. The necropsy showed that two joints contained an opaque fluid comparable to that found in the preceding cases and one a considerable quantity of clear fluid. There was excess of clear fluid in the pericardium (Fig. 3). The mitral valve showed

FIG. 3



Micro-photograph of a chorda tendinea, showing local swelling, the result of the diplococcus infection. A part of the mitral valve from a rabbit that had died from acute carditis was stained in bulk and stretched upon a slide together with its attached chordæ tendineæ. The upper limit of the photograph shows the lower margin of the valve. The chorda upon the left shows two swellings, an upper larger one close to the valve and a lower smaller one at its junction with the musculus papillaris. These swellings are caused by a connective tissue proliferation analogous to that in the valve substance and are the early expression of that change which in rheumatic fever results eventually in the deformity of the chorda tendinea seen in mitral stenosis.

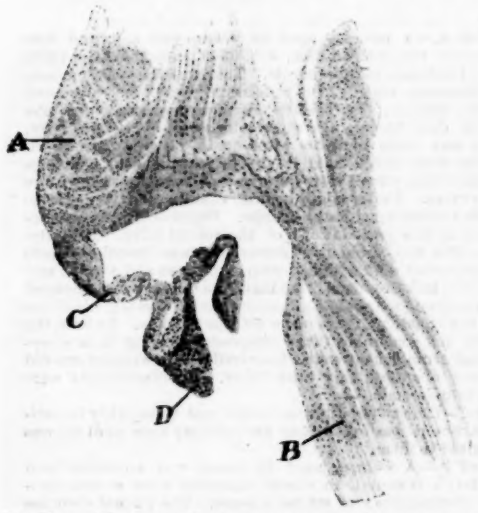
a condition macroscopically comparable to that of an early rheumatic valvulitis, and the tricuspid valve showed also, in the very earliest stage, a row of granulations along the border. The condition of the liver resembled that found in Case 2 and the kidneys also showed some white slightly raised areas quite firm on section. The tonsils were unaffected. The microscopic examination disclosed points of the greatest interest. In the parietal layer of the pericardium, stretched out and stained, we found the diplococci following the course of the blood-vessels in the perivascular lymphatic spaces. We also demonstrated them in the mitral valve and—what by the light of subsequent events was especially noteworthy—we discovered them in the kidneys in great numbers. There were no suppurative foci in the viscera (Figs. 4 and 5).

The organisms were once more isolated and injected intravenously into a rabbit. This rabbit developed polyarthritis, pericarditis, pleurisy, and pneumonia, with slight valvulitis.

The animal was killed at the height of the disease and the especial point of interest in the necropsy was the macroscopic appearance of the thoracic viscera. There were plastic pericarditis and mediastinitis, with plastic pleurisy over those parts of the lungs that are contiguous to the pericardium. The liver had the mottled appearance that is seen in man as a result of severe and acute rheumatic carditis. During the illness the rabbit had passed urine which was acid and contained numerous urates, granular casts, and diplococci. From the contents of the bladder we isolated and cultivated the diplococcus by the usual methods. There was also exudation into the tendon sheaths around the affected joints and the connective tissue near the larger joints had the gelatinous appearance of the nodule in man. We demonstrated the diplococci in the valves, pericardium, joint exudate, liver, kidneys, connective tissues around the joints, and in large numbers in the lungs and pleuræ. It is, we think, impossible not to recognise in this case the extraordinary similarity to the most severe types of rheumatic fever in childhood.

Another case in which some remarkable results occurred was the second of those in which we obtained a pure culture

FIG. 4.



THE MITRAL VALVE OF A RABBIT, TO SHOW THE COMMENCEMENT OF A VEGETATION (LOW POWER).

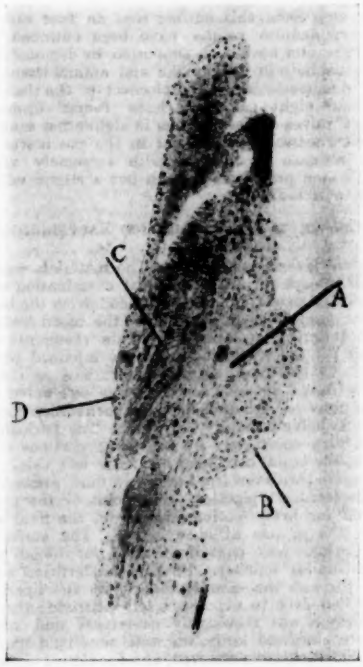
A section through the auriculo-ventricular junction and mitral valve of a rabbit.—In the process of embedding the valve has become somewhat bent upon itself, but it will be readily seen that the cellular proliferation (D) is upon the auricular surface. Under this magnification the organisms are not visible, but they are present at the margin of, and within, the cell proliferation.

Explanation of the plate.—A, The auricle. B, The ventricle. C, The mitral valve. D, The area of cell proliferation. Stain carbol-thionin.

of the diplococcus from the blood of a living patient suffering from rheumatic pericarditis. The organism was grown upon the acid medium and transferred to blood agar. Intravenous inoculation of a rabbit produced the following symptoms. Four days after inoculation the rabbit had begun to waste and limped upon the right hind leg, and the knee-joint became swollen. This continued for a week, the animal still wasting, but then it improved so much that the limp disappeared. The heart all this time acted very rapidly but there was no murmur. Five weeks after this there was a relapse and both the hind legs became very weak and the animal very emaciated. There did not appear to be any joint swelling at this time. This condition continued for about three weeks and then gradually passed off, and no cardiac murmur was detected at any time. Was this a paralytic phenomenon? It was a natural suggestion that it might be chorea, but, if so, there was not the slightest twitching, only this great weakness of both lower extremities that gradually passed away.

A third case which produced an experimental result was that of Case 6. The case was one of severe rheumatic carditis with early pericarditis. Associated with the diplococci there were some short bacilli and the growth in the pericardial fluid was accompanied by an offensive odour. An inoculation of the two organisms into a rabbit proved negative. An inoculation of the diplococci only into another rabbit also proved negative. We were surprised at this result and three weeks later a third attempt was made, though we felt very doubtful that any result would be obtained because of the difficulty of maintaining the virulence of the organism. This rabbit remained apparently well, but three weeks afterwards we found the temperature raised and a definite systolic murmur at the apex. There was no arthritic change, but the murmur remained constant for a week and was more definite than any that we had previously heard. The animal was then killed and the tricuspid and mitral valves were found to be

FIG. 5.



A transverse section of a cusp of the pulmonary valve, from a case of rheumatic carditis. The case, No. 7 in the series, was a characteristic example of rheumatic fever in childhood. After death the pericardium was found completely adherent and there were recent mitral aortic and pulmonary valvulitis. The pulmonary valve showed numerous minute projections upon the ventricular surface. The figure shows that the condition of the morbid change is still one of connective tissue cell proliferation and that the endocardium is intact. The diplococci were present in scanty numbers in the valve, but cannot be seen under this magnification. A, The commencing vegetation. B, The endocardium upon the ventricular surface. C, The connective tissue basis of the valve. D, The endocardium upon the arterial surface. Stain, carbol-thionin.

inflamed. There was also a moderate quantity of clear fluid in the abdominal cavity. We demonstrated the organisms in the valves and in the parietal pericardium, throughout which there was a definite cellular exudation.

The next case (Case 7) gave a negative result, but at this we were not surprised, for the pericardium was totally adherent, and though we obtained the diplococci from the granulations of the mitral valve they were in scanty numbers and the growth was not a vigorous one. No detectable clinical result followed the inoculation of a rabbit in the usual manner.

The last case (Case 8) was that of an adult, aged 32 years, who came to St. Mary's Hospital suffering from an acute

"sore throat." The throat was red and had the appearance of a rheumatic angina. There were muscular pains and a history of a previous attack of rheumatic fever. The heart was extensively diseased, both mitral and aortic valves were incompetent, and the action was excited and the præcordial dulness greatly increased in extent. The condition of the heart completely bore out the history of previous rheumatism. A culture was made from the throat in the milk medium and the diplococcus discovered among other organisms. This was isolated by means of blood agar plates and a pure culture injected intravenously into a rabbit. Three days after inoculation there was dyspnœa and the heart was acting with great rapidity. Two days after this a loud mitral murmur developed and the respirations were now extremely rapid. The rabbit died the same night somewhat unexpectedly. The necropsy showed great dilatation of the heart and a large vegetation upon the mitral valve with an adherent antemortem blood-clot filling the left auricle. We demonstrated the diplococci in the granulation, pericardium, and pleural exudation, and isolated them from the blood and cerebrospinal fluid.

It will be seen from this outline that on four different occasions very definite results have been obtained with rabbits. The results have been supported by demonstration of the diplococci both in the human and animal tissues. In addition to demonstrating the diplococci in the tissues in most of these eight cases we have found diplococci in the heart valves or pericardium in eight other examples of undoubted rheumatic fever, and in the pia mater and brain from a case of chorea with extremely violent movements, which proved fatal with but a slight valvular lesion and no pericarditis.

THE OUTLINE OF THE METHODS OF BACTERIOLOGICAL INVESTIGATION.

1. *The materials for examination.*—The materials selected in the human subject for bacteriological examination were: (*a*) the pericardial exudation; (*b*) the blood from the heart; (*c*) the granulations from the valves; (*d*) the blood from the living subject during an attack of acute rheumatic pericarditis; and (*e*) the exudation from the inflamed tonsils. The material in the fatal cases was obtained as soon as possible after death and the necropsy was conducted with strict precautions for the prevention of contamination, all the instruments being carefully sterilised. The pericardium was exposed very completely by removing portions of the ribs as well as the costal cartilages upon the left side. The surface was seared with hot irons and any fluid present was drawn up in sterilised pipettes. The point of the pipette was broken off inside the pericardial cavity, the fluid withdrawn, and the pipette at once sealed. The surface of the right auricle was cauterised and the blood withdrawn in a similar manner. Finally, a sterilised suture was passed through the cardiac muscle at the apex and the heart pulled over to expose the left ventricle; then the posterior surface was thoroughly cauterised and rapidly opened with a sterilised knife, the walls were held apart by forceps, the blood-clot was removed, and the mitral valve was exposed and curetted.

2. *The culture media.*—Both liquid and solid media were used. The fluid media were incubated aerobically and anaerobically. The temperature of incubation was 37° C. The following media were used:—(*a*) Fluid.—(1) Bouillon and milk, acidified with lactic acid; (2) pork broth made with Chapoteaut's peptone and rendered strongly alkaline (in imitation of Wassermann's medium); (3) bouillon of various degrees of acidity and alkalinity; (4) ascitic fluid; and (5) cow's milk and human milk. (*b*) Solid media.—Agar, serum agar, blood agar, glucose agar, glycerine agar, and egg albumen. The organism grew best anaerobically in an acid medium. It also grew aerobically in the same medium and in blood smeared upon slightly alkaline agar. The anaerobic cultures were made in Pasteur's pipettes, which were exhausted by an air-pump and hermetically sealed. Films were invariably made from the culture used for experimental purposes before the inoculation.

The following is a detailed account of the eight cases of rheumatic fever with the investigations made from them.

CASE 1.—A girl, aged 17 years, was admitted into St. Mary's Hospital on Jan. 16th, 1899, suffering from purpura and rheumatic morbus cordis. This was the second attack of rheumatic fever and in addition five years before there had been an attack of chorea. This case was published in detail in THE LANCET of Oct. 28th, 1899, p. 1163. After a prolonged illness the patient succumbed to severe morbus cordis. A severe attack of pericarditis had developed while in the hospital and death occurred on April 15th. At the necropsy, which was made 24 hours after death, the pericardium was found to be adherent, the adhesions breaking down quite easily. The heart was enlarged and both hypertrophied and dilated. There was mitral, aortic, and tricuspid valvulitis. The other viscera showed the changes usually found in association with severe morbus cordis. There was one small infarct in the spleen. Under microscopical examination the cardiac muscle showed extreme fatty change. Bacteriology.—With Mr. H. G. Plimmer upon two occasions we made cultivations from the blood of the patient during life, taking advantage of a venesection that had been done for right heart-failure on each occasion. Both times we obtained from the tubes of the milk medium diplococci arranged in chains. The medium was treated aerobically and anaerobically. The milk tubes were the only media used.

Note.—At this time we were intent upon Achalme's researches and did not pursue the investigation of the cocci. In one of the anaerobic tubes we found a bacillus but were unable to isolate it, and after considerable investigation we came to the conclusion that it was a contamination.

CASE 2.—A patient, aged 19 years, was admitted into St. Mary's Hospital on Dec. 4th, 1899, suffering from pains in the joints and morbus cordis. This was the fourth attack of rheumatic fever. On admission there was advanced cardiac disease. Pericarditis rapidly developed and the patient died three days after admission. The necropsy, which was made 14 hours after death, showed recent pericarditis with turbid fluid in the pericardial sac, moderate stenosis of the mitral valve, and recent vegetations upon the aortic valve. Under microscopical examination the cardiac muscle showed much fatty change. Diplococci were demonstrated in the granulations of the mitral valve. Bacteriology.—The fluid from the pericardium was inoculated into the medium of milk acidified with lactic acid and aerobic and anaerobic cultures made. At this time we were still engaged in investigating Achalme's bacillus and following his directions the anaerobic tubes were left for 10 days. In both the aerobic and anaerobic tubes diplococci growing in a streptococcal arrangement were discovered. These organisms did not grow upon ordinary agar tubes. No inoculations were made into animals.

Note.—The strepto-diplococci were not thoroughly investigated, but it was found that an ordinary agar medium was not suited to them.¶

CASE 3.—A woman, aged 20 years, was admitted into St. Mary's Hospital, moribund, suffering from severe rheumatic pericarditis and mitral disease. The patient died the same day. The investigation was incomplete. Through a puncture in the pericardium we withdrew some sanious pericardial fluid in a sterilised pipette. Various media were used and from a bouillon tube and the milk medium we obtained diplococci contaminated with sarcinæ.

Note.—In this case the diplococci grew in chains in the acid milk medium in a manner precisely similar to that noted in the two preceding cases. Upon ordinary media these organisms failed to grow.

CASE 4.—A patient, aged nine years, was admitted into the Hospital for Sick Children, Great Ormond-street, on Oct. 11th, 1899, suffering from dropsy and morbus cordis. There was no definite history of rheumatism and no history of scarlet fever. Upon admission the heart was found to be enlarged and there was evidence of organic mitral disease. There were dropsy, albuminuria, and ascites. The illness was prolonged and the condition for some time stationary, but in March active rheumatism developed and nodules appeared; this was rapidly followed by cardiac failure and death on March 20th, 1900. At the necropsy, which was held 36 hours after death, the pericardium was found to contain some recent plastic exudation and excess of clear fluid. The valvular disease was slight but the heart was much dilated and hypertrophied. The lungs were œdematous, the liver was "nutmeg" in appearance, and the kidneys and spleen were firm. Under microscopical examination the cardiac muscle showed granular and fatty changes and films from the pericardial fluid and heart wall showed diplococci. Diplococci were also found in the mitral valve. Bacteriology.—(1) Three Pasteur pipettes of the pericardial fluid were incubated aerobically at 37° C. for three days; and (2) blood-agar tubes were inoculated with

the pericardial exudation and curetted granulations from the mitral and aortic valves. The diplococcus was found in every tube in pure culture. On blood agar they grew in discrete and easily detachable colonies. The pericardial fluid had increased in opacity and flakiness. The reaction of the pericardial fluid was distinctly acid and there was no offensive odour. Subcultures were made upon the milk medium, but on this occasion they did not grow well. Two tubes of the pericardial fluid were injected intravenously into a rabbit.

Rabbit No. 1.—Three days after the injection the animal was wasting and the left shoulder-joint was swollen. Nine days afterwards the right hip and shoulder had become swollen. On the tenth day from the date of inoculation the rabbit died from broncho-pneumonia. At the necropsy the heart appeared enlarged, but there was no definite valvulitis or pericarditis visible. There was a definite excess of clear fluid in the pericardial sac. The cartilages of the affected joints were reddened but there was no ulceration of their surfaces. The right shoulder-joint and right hip-joint contained an excess of clear fluid. The left shoulder-joint contained an opaque fluid and films afterwards showed that the fluid contained many endothelial cells from proliferation of the cells lining the synovial membrane of the joint together with a scanty number of leucocytes. The liver was dark red and engorged with blood. The spleen was firm and the kidneys were apparently natural. There were no traces of abscess formation anywhere. The lungs were solid in patches from broncho-pneumonia. There was no peritonitis. Under microscopical examination the strepto-diplococcus was demonstrated in the joint fluid and the mitral valve which was stained in bulk. The liver was engorged with blood. The heart showed no fatty change. The spleen and kidneys showed nothing distinctive. Bacteriology.—The clear fluid from the right shoulder joint and heart blood were used for inoculation of anaerobic tubes of the milk medium and 48 hours afterwards these tubes were found to contain the organism growing vigorously in chains. From these tubes six blood agar cultures were made aerobically. The six blood agar tubes were used for the inoculation of the second rabbit.

Rabbit No. 2.—Three days after inoculation the right knee-joint became stiff and the animal had lost 160 grammes in weight; four days afterwards the left shoulder became swollen; five days afterwards both the knee-joints became affected, and the right was more swollen; 14 days afterwards the animal was much wasted, the heart was rapid and feeble, and the animal was short of breath. The joints still remained swollen. 17 days after we detected a basal systolic murmur over the position of the large vessels; the next day this became fainter and then disappeared. With this disappearance the heart sounds became muffled at the base and we diagnosed as the most probable explanation a pericarditis with effusion. 20 days after inoculation the animal died. The swelling of all the joints except the right knee had gradually disappeared some days before death. At the necropsy the heart was enlarged and there was excess of clear fluid in the pericardium and also a viscid coagulum. The visceral layer of the pericardium showed slight roughening over the base of the heart. There was no definite valvulitis. The liver was dark red and mottled with white spots of varying size. The spleen was firm. The kidneys showed no definite changes. There was no trace of suppuration in any of the viscera. The affected joints were reddened and except in the case of the right knee contained a very slight excess of clear fluid. The right knee was distended with an opaque fluid which, as in the case of the first rabbit, contained many endothelial cells and also mononuclear and polynuclear leucocytes. The cartilages of the joints were unaffected. The tonsils were not inflamed. There was no peritonitis. Under microscopical examination: (1) in films from the joint the diplococcus was demonstrated in considerable numbers; (2) the heart muscle showed definite fatty change in many fibres; (3) the white patches in the liver proved to be liver cells undergoing necrosis; (4) the pericardial fluid clotted rapidly in the pipette after withdrawal, the clot in the pericardial sac and in the pipette showing a delicate fibrino-cellular structure; (5) the kidneys and spleen showed no change of note; and (6) there was no peritonitis. There were no foci of suppuration in the viscera. Bacteriology.—Cultures were made from the heart blood and right knee-joint in the milk medium and in both series of tubes the diplococcus was found growing vigorously in pure culture.

Rabbit No. 3.—A third rabbit was inoculated with the cultivations upon three blood agar tubes but with a negative result.

Rabbit No. 4.—A fourth rabbit was inoculated with the contents of six blood agar tubes and symptoms once more commenced to appear on the third day and developed as follows. On the third day after inoculation the right tarsal joint became swollen and tender. On the sixth day afterwards there was wasting and the left knee-joint was swollen. On the seventh day afterwards the right carpal joint swelled. The heart's action was excited and we suspected a mitral murmur. The next day this murmur was definite and then became less audible. On the tenth day after inoculation we suspected a tricuspid murmur and the animal was killed to verify these conclusions. For some days previously there had been very marked dyspnœa. At the necropsy the right carpal and tarsal joints were distended with an opaque fluid; the left knee-joint contained clear fluid. The cartilages were reddened but otherwise unaltered. The pericardium contained an excess of clear fluid. The heart was dilated. There was no visible pericardial roughening. The mitral valve showed definite granulations, the appearance exactly resembling an early rheumatic endocarditis. The tricuspid valve showed a still earlier stage. The aortic and pulmonary valves were unaffected. The liver was dark red and mottled with firm white areas, some of them slightly raised above the surface. The spleen was pale but firm. The kidneys were both pale and contained a few white areas, firm and slightly raised above the surface. The tonsils were unaffected. In none of the viscera were there any foci of suppuration. There was no peritonitis. Under microscopical examination (1) in the parietal layer of the pericardium, stretched out and stained in bulk, the diplococci were clearly seen in great numbers along the course of the vessels, lying apparently in the perivascular lymphatic spaces; (2) the mitral valve showed on section an early granulation on the auricular surface, consisting of a proliferation of the connective tissue cells of that part of the valve. The delicate endothelial layer of the endocardium passed over this granulation, and in the granulation and in the deeper part of the endocardium diplococci were visible. They could be seen also in the endocardium lining the auricle and ventricle and causing in places cell proliferation. They were also present in considerable numbers in the retiform tissue at the base of the valve, that is, in the position of the valve ring; (3) the joint fluid showed numerous diplococci and endothelial cells, also eosinophiles and some polynuclear leucocytes; (4) the liver showed numerous areas of coagulation necrosis; (5) the kidneys showed areas of coagulation necrosis, especially in the region of the convoluted tubules and numerous diplococci in these areas; (6) the heart muscle showed well-marked fatty and other degenerative changes; and (7) there was no peritonitis. Bacteriology.—The diplococci were obtained in pure culture from the joints and heart blood. This case made clear several important facts: (1) the early and definite affection of the heart which we had suspected previously to be a result of the infection became now a certainty; (2) the post-mortem appearances of the heart and the microscopic changes were analogous to those found in rheumatic fever; (3) again there was no suppuration in the viscera; and (4) the kidneys showed that the diplococci were present in great numbers. Inoculations were next made from the cultivations upon six blood agar tubes obtained from the foregoing case and were injected into a rabbit in the usual way.

Rabbit No. 5.—The rabbit developed the following symptoms. Four days after the inoculations the right carpal joint was swollen and the heart was rapid and excited. Other joint swellings followed. The cardiac rhythm became triple and later the action irregular. There were marked dyspnœa and a mitral murmur. Seven days after we heard a pericardial friction sound and diagnosed also pneumonia over the fronts of both lungs. Upon the previous day a great quantity of thick white urine was passed. On the eighth day the rabbit was killed, with the diagnosis of pericarditis, valvulitis, pneumonia, and polyarthritis. At the necropsy the appearance of the thoracic organs was such as is seen in severe rheumatic fever. There were pleurisy with plastic exudation and pneumonia over those parts of the lung that covered the heart. There were also mediastinitis and recent plastic pericarditis with some effusion of clear fluid in the pericardial sac. The heart was greatly dilated and the muscle was pale. The mitral valve showed early valvulitis. The liver was enlarged and mottled red

and white, just such an appearance as is seen in acute rheumatism. There were no white firm areas as in former cases. The spleen was enlarged and was softer than in previous cases. Both kidneys were pale. The joints contained an opalescent fluid and the connective tissue around them had the gelatinous appearance suggestive of a nodule formation. The tendon sheaths around the right tarsal joints contained an opaque fluid. There was no peritonitis. The tonsils were not affected. The bladder was much distended and thick white urine was withdrawn by a pipette. This fluid on adding acetic acid cleared rapidly. The urine under the microscope showed numerous dumb-bell shaped crystals of uric acid, diplococci, and granular casts. There was no suppuration in the viscera. The heart muscle was at once teased and examined microscopically. Numerous clear granules were seen in the fibres, which stained faintly with osmic acid. Under microscopical examination the diplococci were demonstrated in the mitral and tricuspid valves and in the pericardium; also in the joints, connective tissue around the joints, kidneys, and liver. In the lungs and pleuræ they were present in very great numbers, especially towards the surface. Bacteriology.—The inoculations were made in the usual way and a free growth obtained upon blood agar. The organisms were in this case isolated from the bladder.

Note.—This case presented the most striking resemblance to severe rheumatic fever both clinically and in the pathological results. The condition of the thoracic viscera was just as is seen in the virulent pleuro-pericarditis of rheumatic fever in childhood. The diplococci in this case were demonstrated in the lungs and liver.

CASE 5.—A youth, aged 16 years, was admitted into St. Mary's Hospital on March 20th, 1900, suffering from rheumatic pericarditis. This was the second attack of rheumatic fever and in addition he had suffered from chorea at the age of 15 years. The illness had commenced a fortnight previously to admission with a sore throat and pain in the right knee, followed by shivering, and pain in the chest. On admission there were general pericardial friction and mitral, and a suspicion of aortic, valvulitis. The heart was much dilated and right heart failure was threatened. On this account he was venesected. This patient made an excellent recovery from the pericarditis, but left the hospital in May with evidence of organic valvular disease. Bacteriology.—On March 24th the patient was venesected and due precautions were taken to obtain the blood free from contamination. Three different media were used: (1) the milk medium (acid); (2) the pork medium (strongly alkaline); and (3) the bouillon medium (alkaline). Anaerobic tubes were made of these media. In one anaerobic milk-tube the strepto-diplococci were growing vigorously. The remaining tubes were sterile. From the anaerobic milk-tube sub-cultures were made and a blood agar tube was inoculated upon which discrete colonies of the diplococci made their appearance. Sub-cultures were made and the remainder injected intravenously into a rabbit.

Rabbit No. 6.—Four days after inoculation the rabbit limped, the right knee-joint was swollen, and it had lost flesh. 11 days afterwards it was still limping and was thinner. 21 days afterwards, though the heart was very rapid, the limp had disappeared and a slight improvement set in. Five weeks afterwards there was a relapse and both hind legs became affected, and the animal could not support the weight upon them. It was now very thin. The heart sounds were very feeble and rapid but there was no murmur. This affection of the hind limbs seemed to be a paralytic phenomenon and no swelling of the joints was apparent. There was no twitching. This symptom also passed away in about three weeks and the animal could use both hind legs again in a normal manner.

CASE 6.—A girl, aged thirteen and a half years, was admitted into St. Mary's Hospital on March 25th, 1900, suffering from active rheumatism and morbus cordis. In January, 1900, the first attack of rheumatism occurred. The present illness had lasted three weeks. On admission the child was very ill. There were numerous nodules, the heart was dilated, there was organic mitral disease, and there was general pericarditis. She grew rapidly worse and died on the 30th. The necropsy, which was made eight hours after death, showed recent lymph upon the visceral pericardium and turbid fluid in the sac. There were recent granulations upon the mitral valve and some thickening of the cusps of the aortic valve. The liver showed an early nutmeg change. The spleen was firm and dark. The kidneys were pale. The pericardial fluid was definitely acid in reaction. On microscopical examination the heart showed very marked fatty change in the muscle fibres and diplococci were demonstrated in the granulations of the mitral valve. Bacteriology.—Films made of the pericardial fluid after incubation showed diplococci and a short bacillus. A cusp of an aortic valve and a piece of the mitral valve were stained and examined in bulk but no organisms were found. A section of the mitral valve showed the cocci in the granulations. The following cultures were made: (*a*) the pericardial fluid was incubated in pipettes; (*b*) the lymph was introduced into (1) blood agar, (2) the milk medium (acid), and (3) the pork medium (alkaline); and (*c*) fragments curetted from the mitral granulations were also placed in the same media. The heart blood was also introduced into other tubes of the same media. Anaerobic tubes were made of the milk medium (acid). The results were as follows. Two of the pipettes of pericardial fluid were sterile, one contained the diplococci, but with them numerous small bacilli, and the odour of the fluid was offensive. The blood agar was sterile. The tube of the heart blood was sterile. A blood agar tube was made from the pericardial fluid. The following inoculations into animals were made. 1. Five minims of the pericardial fluid containing the diplococci and bacilli were injected intravenously but the result was negative. 2. Later the contents of six blood agar tubes from a sub-culture were inoculated but the result was again negative. Later a third attempt was made. The culture upon blood agar was growing, but not vigorously, and a sub-culture was accordingly made in the acid medium and then this re-transferred to six blood agar tubes.

Rabbit No. 7.—A rabbit was inoculated but no apparent result followed until three weeks after the inoculation, when a definite systolic murmur was detected at the apex and the temperature in the rectum was found to be 102·8° F. No joint lesion developed and after detecting the murmur each day for a week the animal was killed. The necropsy showed definite tricuspid and mitral valvulitis and a definite excess of clear fluid in the peritoneal cavity. The organism was demonstrated in the valves and parietal pericardium in which there was definite cellular exudation.

Note.—This case corresponded clinically to the well-known rheumatic condition of organic valvular disease occurring without arthritis.

The pyrexia in the rabbits in these cases was moderate, the range being from 101° to 103·4° F. The temperature was taken in the rectum. In the more severe cases the fever was continuous though with some oscillation.

CASE 7.—A boy, aged nine years, was admitted into the Hospital for Sick Children, Great Ormond-street, on Feb. 26th, 1900, suffering from rheumatic fever from which his mother also had suffered. On admission there were pericarditis and arthritis. The illness was prolonged and after a partial improvement a relapse of carditis occurred and terminated fatally on April 30th. At the necropsy, which was made 30 hours after death, the tonsils were found to be large and inflamed. There was consolidation of areas of both lungs. The heart was large and the muscle pale and soft. The pericardium was generally adherent, the adhesions breaking down easily. There were recent granulations upon the mitral and aortic valves and the pulmonary valve showed very early inflammation. The liver, kidneys, and spleen showed the usual changes. At the microscopical examination the important fact was the demonstration of the diplococci in the tissue of a rheumatic nodule. The nodule was of about the size of a small pea and was situated over the left olecranon. The diplococci were in small clumps in the fibrous tissue. We are not aware that they have been demonstrated before in these structures which are looked upon as extremely characteristic of rheumatic fever. Bacteriology.—The recent granulations on the mitral and aortic valves were curetted and the heart blood taken in a sterilised pipette. Films from the mitral granulations showed a few diplococci. The milk medium and blood agar tubes were used. The milk medium was treated anaerobically, and from the curetted granulations of the mitral valve a growth of strepto-diplococcus was obtained but it was not abundant. The usual blood agar tubes were made but the growth was poor. Intravenous inoculation in a rabbit (No. 8) proved negative.

CASE 8.—A man, aged 28 years, came into St. Mary's Hospital on June 7th, 1900, suffering from a "sore throat." The illness had commenced with general malaise and pains in the

limbs and joints. There was a history of a definite attack of rheumatic fever four years before. The throat was injected and the tonsils were in a condition of acute catarrh. The heart was much enlarged and both mitral and aortic valves were incompetent. The enlargement of the heart, the character of the murmurs, and the pulse all pointed to a previous attack of rheumatic carditis and confirmed the history of previous rheumatism. We diagnosed from the history, the appearance of the throat, and the excited action of the heart that the condition was one of rheumatic tonsillitis. A culture was made upon the acid milk medium and the tube incubated aerobically. Minute diplococci were found in a film in association with other micro-organisms. Bacteriology.—24 hours after the culture had been made a film showed that a diplococcus was growing in association with other micro-organisms and blood agar tubes were inoculated from the milk culture. On the 12th blood agar plates were made from these tubes and a diplococcus isolated and transferred to blood agar tubes. The diplococcus resembled morphologically and in its growth that found in the seven preceding cases. On the 14th the contents of six blood agar tubes were injected intravenously into a rabbit.

Rabbit No. 9.—On June 15th the respirations were rapid and the action of the heart was excited. On June 16th the heart sounds were loud and the action was very rapid. On June 18th there was suspicion of a systolic apical murmur and of pleurisy. On June 19th a very loud systolic apical murmur was discovered and both pleurisy and pericarditis were suspected. The rabbit died in the night somewhat unexpectedly. At the necropsy the heart was found to be greatly dilated and there was some excess of fluid in the pericardial sac. The mitral valve showed a large vegetation upon the anterior flap and to this a large ante-mortem clot occupying much of the left auricle was firmly adherent. The posterior flap was reddened. The aortic valves were reddened and the aorta close to the valve showed a small patch of aortitis. The tricuspid valve was reddened. The pulmonary valve was apparently normal. There was recent fibrinous exudation in the pleuræ. The lungs were engorged and solid in small areas, close beneath the pleuræ. There was no trace of suppuration in any of the viscera. Under microscopical examination the diplococci were demonstrated in the vegetation of the mitral valve, in the pericardium, and pleural exudation. Bacteriology.—Cultivations were made anaerobically in the acid medium from (*a*) the blood and (*b*) the cerebro-spinal fluid from the lateral ventricles. In both instances the diplococci were obtained in pure culture.

Note.—This case by the light of the former one is of extreme interest. 1. It demonstrated conclusively that these diplococci when present in the throat of a man the subject of rheumatic fever will, if isolated during an attack of angina faucium, cause valvulitis and pericarditis, both non-suppurative, when inoculated intravenously into a rabbit. 2. The presence of the micro-organism in the cerebro-spinal fluid is very suggestive when the close association of chorea and rheumatic fever is considered from this point of view.

(To be continued.)

SOME POINTS ABOUT POST-DIPHTHERITIC PARALYSES.

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FOR being able to publish the following details concerning post-diphtheritic paralyses I have to thank Dr. R. A. Birdwood of the Park Hospital, Hither Green, through whose courtesy I was permitted to have free access to the case-books, wards, and laboratories of the above hospital. I hope that the facts herein contained will be found lucid and concise. The figures are based upon all the cases of diphtheria admitted into the Park Hospital during 1899, and I start first with general facts and then enter upon a few points of special interest.

Without further comment I will start with the general facts for the year 1899, which were as follows. During 1899 there were 1316 cases of diphtheria in the wards. In the same year there were 275 cases of post-diphtheritic paralysis and paresis, so that in about one case of diphtheria out of every five cases the patients suffered from paralysis or paresis. There were 147 cases in males and 128 in females. Considering that the number of males and females admitted with diphtheria in 1899 were almost exactly the same, the above shows that the males (53·5 per cent.) suffered more from paralysis after diphtheria than the females (46·5 per cent.). Of those who suffered from paralysis there were 80 deaths (29 per cent.), 44 occurring in males (55 per cent.) and 36 in females (45 per cent.).

TABLE I.—*Incidence of Paralysis and Paresis in Age-periods and Sex for the Year 1899.*

Ages.	Males.	Females.	Total.
Under 1 year	2	3	5
1 to 2 years	7	9	16
2 „ 3 „	9	8	17
3 „ 4 „	22	15	37
4 „ 5 „	19	10	29
5 „ 6 „	15	25	40
6 „ 7 „	19	16	35
7 „ 8 „	17	16	33
8 „ 9 „	7	9	16
9 „ 10 „	8	6	14
10 „ 11 „	8	4	12
11 „ 12 „	3	2	5
Over 12 „*	11	5	16
Totals... ...	147	128	275

* Including those in their thirteenth year. The ages of these patients were as follows: two were 12 years of age, four were 13 years, four were 14 years, three were 15 years, one was 16 years, one was 20 years, and one was 35 years.

TABLE II.—*The 275 Cases taken in Five-yearly Periods.*

Age-periods.	Males.	Females.	Total.
Under 5 years.*	59	45	104
5 to 10 years.*	66	72	138
Over 10 years.	22	11	33
Totals... ...	147	128	275

* In the age-period from three to eight years the numbers were: males, 92; females, 82; total, 174.

Thus out of 275 cases of paralysis and paresis for all ages we find that there were 174 cases that occurred between the ages of three and eight years, equalling 63·2 per cent. of the total number. Again, we see that there were 40 cases between the fifth and sixth year of age, equalling 14·5 per cent. of the fatal cases for all ages, which in the above table is in excess of any other period of life. The females suffered most severely in the five to six years period, whilst the males fared worst in the three to four years period, but this latter does not prove such to be the case absolutely without stating the number of each sex admitted from three to four years of age and from five to six years of age respectively.

CARDIAC PARALYSIS.

By cardiac paralysis, or as it has sometimes been called "vagus paralysis," I mean to infer those cases which are clinically characterised by (1) heart failure, (2) vomiting, (3) blueness of the skin and the mucous membranes, and (4) generally coldness of the extremities in the final stages. As regards the circulatory system the following conditions are met with, those first mentioned being the most common ones: dilated heart; weak action of the heart; irregular, intermittent, or tachycardiac heart; the heart sounds are approximated; the first sound is faint, short, with systolic murmur, or is heard reduplicated at the mitral and the tricuspid areas; the galloping rhythmic heart; the brady-cardiac heart; and the heart with pulmonary systolic murmur. Generally several of the above conditions are associated together. Thus it is very frequent to find in the heart in a cardiac case at some period dilatation, weak action, irregularity, intermittency, tachycardia, approximation of the first and second sounds, and a short faint first sound often with a systolic murmur. When galloping rhythm is observed it is generally near the end. The pulse is generally very

fast, it is frequently irregular, is often hardly felt (especially when death is approaching), and frequently it is intermittent. As a rule all the above conditions are noticed in cardiac cases in some stage or other. There are occasionally hæmorrhages in these cardiac cases. They may be subcutaneous and are generally small in extent or there is sometimes epistaxis, &c. In some cases there is collapse and very sudden death. The temperature is first 2° or 3° up and then subnormal. In the respiratory system breathing may be laboured and there is occasionally sighing respiratory action. Œdema of the lungs is not infrequent. With regard to the urinary system albuminuria is almost invariably present; not infrequently there is suppression of the urine, and occasionally there is hæmaturia. The general nervous symptoms are: convulsions, drowsinesss, delirium (occasionally), and restlessness (frequently).

The above-mentioned facts enumerate the chief symptoms and signs in cases of cardiac paralysis, though of course there are others, but these perhaps are the ones worthy of mention. Some of the facts, especially those relating to the urinary system, are also what one might get in a case of diphtheria without the paralysis.

During the year there were 30 deaths in the various forms of paralysis after diphtheria and 64 of these cases were due to cardiac paralysis, so that only 16 deaths were due to other causes, whilst 80 per cent. of the deaths were the result of cardiac paralysis. Of all forms of paralysis 23 per cent. were of the cardiac variety, and of the 64 cases of cardiac paralysis 33 were in males and 31 in females.

TABLE III.—*Season in Cardiac Paralysis and the Approximate Proportion of Cardiac Cases to the Total Number of Diphtheritic Cases Admitted Each Month.*

—	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Number of patients admitted with diphtheria in various months... ...	71	113	67	48	73	113	148	115	111	158	159	135
Number of cases in each month	5	6	4	2	3	1	9	4	4	11	10	5
Approximate proportion of cardiac cases	1 to 14	1 to 19	1 to 17	1 to 24	1 to 26	1 to 113	1 to 16	1 to 29	1 to 28	1 to 14	1 to 16	1 to 27

Age-periods of cardiac paralysis.—Under the age of one year there was one case, from one to two years there were four cases, from two to three years 10 cases, from three to four years seven cases, from four to five years seven cases, from five to six years six cases, from six to seven years 12 cases, from seven to eight years six cases, from eight to nine years six cases, from nine to 10 years there was one case, from 10 to 11 years there were two cases, and from 13 to 14 years two cases. Here we find the great proportion of cases occurring between the ages of two and nine years inclusively, the majority being in the six to seven years age-period. After nine years of age there is a great falling off in these cases.

The number of days after the beginning of an attack of diphtheria that the symptoms and signs of cardiac paralysis were first noted.—In one instance the symptoms came on upon the second day of illness, while in one other case it seems to have been on the thirty-sixth day. These marked the two extremes. Of the 64 cases the average date upon which the symptoms appeared was the seventh day.

Duration of cardiac paralysis.—The extremes were one day and 14 days, though, perhaps, some doubt may be expressed as to the latter period. The average duration of life after cardiac paralysis was first clinically noted was four days.

The temperature in cardiac paralysis.—A fact which strikes one forcibly after looking over some 100 odd charts is that there seems to be one particular kind of chart which occurs in most cases of cardiac paralysis, especially seen in those cases which run their course in from six to nine days. For instance, a patient, aged six years, came in on the fourth day of the disease with a temperature of nearly 101°F., which fell to 100° on the fifth day, then on the sixth day there was a drop to 97°, and though the temperature nearly rose to normal again for a short time it kept near the 97° till the ninth day of illness, when it was below 97° and death occurred. The cardiac symptoms in this case came on upon the sixth day of the disease.

Greatly swollen cervical glands in the early stages of cardiac paralysis.—Large numbers of these cases show early great swelling of the cervical glands, generally bilateral. It certainly does not occur in all cases for there is a fair proportion without and, indeed, many cases show only the slightest enlargement. Still, cases of diphtheria with greatly enlarged cervical glands in the early stages require urgent attention and frequently turn out to be cardiac cases. The amount of membrane seen in these cases is not of much diagnostic importance, for though cardiac cases often have much membrane there is just as frequently very little, and again we often see many cases which are non-cardiac with great masses of membrane.

DIAPHRAGMATIC PARESIS AND PARALYSIS.

There were 21 cases of this form of paralysis during the year, which compared with the total cases of all forms of paralysis and paresis during the same period, 275, gives the result that 7·6 per cent. of cases were diaphragmatic. It may be here mentioned that as diaphragmatic paralysis rarely occurs without some other paralysis or paresis these cases, with only one or two exceptions, contained various other parts affected in the same patient, as will be seen directly.

Deaths from diaphragmatic paralysis.—Of 21 cases of the above paralysis 11 terminated fatally and in 10 the patients recovered, so that practically half of the patients succumbed, and compared to the total deaths for the year from all forms of paralysis we find that 13·7 per cent. were due to diaphragmatic paralysis. In the 21 cases 13 were males and eight were females. The age distribution in these cases was as follows. Under the age of one year there were no cases, from one to two years there were two cases, from two to three years three cases, from three to four years six cases, from four to five years two cases, from five to six years five cases, from six to seven years no cases, from seven to eight years there was one case, from eight to nine years one case, from nine to 10 years there were no cases, and from 10 to 11 years there was one case. Most of the cases occurred between the ages of two and six years. As to the day of disease upon which diaphragmatic signs were first noticed clinically the two extremes were 12 and 50 days respectively, while the average time was 37 days. The duration of fatal cases after paralysis first set in was three days for the minimum time, while one case was put down at 65 days; but this case is not counted in the average, as when the first signs were noticed they were doubtful and probably the diaphragm did not suffer till some little time later. The average duration was from six to seven days.

The following are brief particulars of the various forms of paralysis or paresis which were associated with diaphragmatic paralysis and the day of onset in each case, counting from the initial symptoms of diphtheria to the first time the paralysis, &c., was noted.

The palate and the diaphragm.—Case 1.—The patient was a male, aged four years. The palate, 50 days; and the diaphragm, 50 days. Case 2.—A female, aged three years. The palate, 24 days; and the diaphragm, 27 days. Case 3.—A male, aged five years. The palate, 11 days; and the diaphragm, 11 days. Case 4.—A male, aged three and a half years. The palate, 35 days; and the diaphragm, 46 days. The point of interest is that the palate was always affected either before or at the same time as the diaphragm.

The palate, the internal rectus, the muscles of deglutition, and the diaphragm.—Case 1.—A male, aged three years. The palate, 31 days; the muscles of deglutition, 32 days the internal rectus, 33 days; and the diaphragm, 36 days. Case 2.—A male, aged one and a half years. The palate, 25 days; the muscles of deglutition, 37 days; the internal rectus, 41 days; and the diaphragm, 61 days. It will be noticed that the same order was maintained in each case.

The palate, ocular, and the diaphragm.—Case 1.—A female, aged four years. The palate, 20 days; ocular, 20 days; and the diaphragm, 39 days. Case 2.—A male, aged one and a half years. The palate, 22 days; ocular, 48 days; and the diahpragm, 46 days. Here the palate was amongst

the first to suffer, but the ocular affection varied. The above are returned as "ocular" because the particular muscles of the eye are not stated.

The larynx, the palate, the external rectus, and the diaphragm.—Case 1.—A female, aged five years. The external rectus, 31 days; the palate, 36 days; the larynx, 37 days, and the diaphragm, 40 days.

The muscles of deglutition, the internal rectus, the ciliary muscle, and the diaphragm.—Case 1.—A male, aged two and a half years. The muscles of deglutition, 29 days; the diaphragm, 34 days; the right internal rectus, 35 days; and the ciliary, 36 days.

The right external rectus, the flexors of the neck, and the diaphragm.—Case 1.—The diaphragm on the thirty-eighth day.

The palate, the external rectus, and the diaphragm.—Case 1.—A male, aged seven years. The palate, 20 days; the external rectus, 17 days; the diaphragm, 43 days. Case 2.—A male, aged five years. The palate, 24 days; the external rectus, 39 days; and the diaphragm, 47 days. Case 3.—The palate, 29 days; the external rectus, 45 days; and the diaphragm, 39 days. The variable position of the external rectus is seen, though the palate generally suffered first and the diaphragm generally last.

PARESIS AND PARALYSIS OF THE PALATE.

There were 110 cases where the palate alone was affected, which equalled 40 per cent. of the total number of cases of various kinds of paralysis and paresis for the year. With regard to sex there were 61 cases in males and 49 in females. The minimum age was one and a half years, the maximum 35 years, whilst the average age was seven years. As to the day of onset the minimum time was the eighth day of diphtheria, the maximum the fifty-fifth day, and the average the twenty-seventh day. The following list shows fairly well how often the palate is affected either alone or with other parts:—

The palate alone	... ...	110 cases.
,,	with the ciliary muscles ...	5 ,,
,,	,, external rectus ...	27 ,,
,,	,, ocular muscles ...	3 ,,
,,	,, right facial	1 case.
,,	,, ciliary muscles and pupils	2 cases.
,,	,, larynx	1 case.
,,	,, diaphragm	17 cases.
Total of times palate suffered		166 cases.

So that of 275 patients suffering from paralysis, &c., in 166 of these patients the palate was affected either alone or with others parts, which equals 60 per cent. of all the cases.

TABLE IV.—*Distribution of Paralysis and Paresis in the Various Months.*

Month.	Cardiac.	Diaphragmatic.	All other forms.	Number of patients admitted to hospital.
January	5	2	16	71
February	6	1	15	113
March	4	1	16	67
April...	2	2	13	48
May	3	0	17	78
June	1	0	10	113
July	9	3	18	148
August	4	3	33	115
September	4	4	22	111
October	11	1	7	158
November	10	1	11	159
December...	5	3	12	135
	64	21	190	1316
	275			

The cardiac and diaphragmatic cases have been discussed before. Under the heading "All other forms" every kind of paralysis and paresis barring the above two are included, but the majority of the cases in this list were those of palate paresis. The number of cases of paralysis can be compared in each month with the number of patients admitted with diphtheria. Noticeable points under the heading "All other forms" are the great number of cases in August (33) and the comparatively small number in October (seven); and it will be seen on looking at the table that just the opposite conditions obtain in cardiac paralysis, where there were rather few cases in August (four) and the greatest number in October (11.) November is somewhat similar to October.

Goldhurst-terrace, West Hampstead.

SOME NOTES ON THE

USE OF MERCUROL: A NEW REMEDY IN URETHRITIS.

BY RAMON GUITERAS, M.D.,

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DURING the last few years several so-called specifics for the treatment of urethritis have been placed on the market, the most prominent of which have been "argonin" and "protargol," both silver derivatives. Argonin, I believe, has lost its popularity somewhat on account of the difficulty some find in preparing a solution from it, and also on account of its liability to decompose. These difficulties were not considered against it until protargol was placed upon the market, which many think to be a superior preparation. Both of these compounds have been used by me in my private practice and clinics with good results.

Some months ago a new remedy was introduced, called "mercurol," which has been given a thorough trial in my clinic, and from the clinic history book of the cases treated by this remedy I have drawn certain conclusions which I present in this paper. Let us first consider what mercurol is before treating of its clinical results.

Mercurol is a chemical compound of nucleinic acid with mercury, the nucleinic acid being obtained from yeast. This organic combination, in the form of a brownish-white powder, is soluble in water but insoluble in alcohol. It does not precipitate albuminous liquids and is not precipitated by alkalies. All that the manufacturers claim for mercurol is that the action of the mercury is rendered more effective and less irritating than it would be outside of this combination. It is not claimed that the nucleinic acid exerts any remedial action, but only that it facilitates the action of the mercury. Briefly, the effect claimed for the nucleinic acid admixture is to render it possible to administer mercury in much larger doses than otherwise would be possible and that without pain or disagreeable symptoms to the patient.

During four months this remedy has been used quite extensively in my clinic at the Post-Graduate Medical School, and 150 cases in all have been treated by this drug, although the statistics that I quote have been taken only from patients who have come in during the last three months before writing this paper. The reason of this is because during the first month in which it was used we did not know what was the preferable strength to prescribe and also because it is our custom in introducing any new remedy to begin with what we consider the minimum strength. In using mercurol we began with a quarter of 1 per cent. and gradually increased it to, in some cases, as high as 5 per cent. By this means it was found that whereas the solutions of smaller percentage had little more effect than water, the stronger solutions were so irritating that the patients usually complained of them at first. We therefore concluded that the average strength that could be best borne by the patient was 10 grains to the ounce, or approximately 2 per cent. Since arriving at this conclusion we have had 100 cases on our books the records of which have been carefully kept. It cannot be said positively that all these cases are true cases of gonorrhœa, as only 33 of them were examined for the gonococcus, and of this number in only 30 was it found to be present. In the remaining 67 no bacteriological examination was made, or, if so, no mention was made of it, and the diagnosis was a clinical one. It is probable, however, that nearly all of these cases were cases of the disease in question, as the experienced eye is usually able to distinguish it. One of the above cases was extremely interesting

as no gonococcus could be found in the urethral discharge, although gonococci were present in that of some venereal ulcers situated on the glans. In prescribing the mercurol solution in these cases a 2 per cent. solution was ordered and the patients were directed to inject themselves with it by means of a small urethral syringe after urinating three times a day and to hold in the injection each time for five minutes.

How mercurol acts is still a question. As it is a germicide we would expect it to kill the gonococcus, but we do not as yet know the action of all germicides. It was supposed for a long time that urethral irrigations of a permanganate of potassium solution cured the disease by killing the gonococcus, but investigations later showed that this was not the case, but that they gave rise to a sub-mucous œdema which was an unfavourable culture ground for the bacteria and they ceased to multiply. The clinical reports of our cases, however, show that frequently in two days after beginning the use of mercurol the gonococci could no longer be found in the discharge, while in some cases they continued to be present for more than a month. In other cases the gonococci disappeared in a few days and then returned and continued in the discharge for some time longer, until shortly before it had ceased, or else the patient left the clinic and consequently could not be kept under observation. In one of the cases reported, for instance, the gonococcus disappeared in five days and returned four days later, after which it continued to be present for three weeks, when the patient left the clinic uncured.

In reading over the report of these 100 cases as summed up in the clinic history book I find the following: practically cured in three weeks, 22; cured in four weeks, 28; cases extending over four weeks, 17; cases leaving the clinic after one or two visits, 18; and cases under treatment at the present date, 15. Such a report can only be considered an "off-hand" one and not one of scientific importance. In fact, it is extremely difficult to make good statistics in this line of cases when the patients are all ambulants, as they do not look upon their sickness as anything more than a slight malady of trivial importance. In consequence of this they do not come steadily and do not attend to themselves properly. They often keep away from the clinic for weeks, only returning when the discharge is troublesome, and when it has diminished they often go on a "spree" and indulge in excesses which may bring it back again, as a discharge which has been absent for several days will frequently return after one drink of beer, wine, or spirits. These patients, also, at times leave the city for a few days or weeks, and consequently their treatment is interrupted. For this and many other reasons no sequence of cases is of great value, but rather selected ones, and the selection should be of those that have been under observation from nearly the beginning of the attack to the end, or at least for a more or less protracted period. It would, therefore, make our report of more value to those interested in the treatment of these cases if we were to cut it down. For of what interest is it to know that certain cases have been under treatment for over four weeks, or that they left the clinic after one or two visits, or are still under treatment, as it does not signify that they were cured or ever would have been.

The expression "practically" cured is also an indefinite one, although sometimes we have to take refuge behind it even at the present day. We can now say positively whether a case is cured or not, for in a case of cure the patient should be free from any disagreeable symptoms, should have no discharge, no flakes in the urine coming from the urethra, and no pus or flakes containing gonococci in the urine after massaging the prostate and seminal vesicles. In olden days physicians considered a patient cured when there was no longer any discharge to be noticed, and probably if this method of determination had been carried out in our clinics the percentage of cures would have been greater, and probably 50 per cent. of those coming regularly would have been considered cured in perhaps an average of four weeks; but the result of the treatment of those cases is now more exactly known, and statistics that were formulated before the days of the recognition of the gonococcus and the *tripperfaden* should no longer be quoted. Some of the cases considered cured or practically cured in the report had at the date of the last visit some of the following notes: (1) slight moisture at the meatus, first and second specimens of urine clear, no shreds; (2) slight moisture, urine clear, few shreds; and (3) no moisture, some shreds, urine clear. The first of these would be considered a cure if no pus or gonococci could be found in a smear of the moisture; the second would be considered a cure if no gonococci could be found in the moisture or shreds; and the third would be considered a cure if the shreds did not come from the urethra but from some inflamed surface above it, and there were no gonococci in the shreds. We all know that there can be a urethral moisture dependent purely upon functional trouble, such as spermatorrhœa and prostatorrhœa, and not upon any inflammatory condition, but the microscope can easily differentiate between them. If the urine is thick after the discharge has ceased the urethritis may be confined to the posterior urethra, and flow back into the bladder rather than forward. Such a return of the discharge would probably quickly follow the discontinuation of treatment and the centrifuged urine would probably show gonococci in its sediment. Therefore, in order to draw conclusions of some value we should only consider the cases that have been under treatment for three or more weeks, and leave out all those that made but one or two visits. If these two groups, consisting of 33 cases, be subtracted, and two more because there were no gonococci found present, we would have 65 cases to consider. Ten of these were cured positively in four weeks, that is to say, there was no discharge, the urine was clear and contained no shreds; 15 more cases were cured in six weeks; 20 more were practically cured in four weeks, that is to say, they had no discharge although there were a few shreds still in the urine or some cloudiness. The remaining 20, who were irregular in their attendance, came occasionally to the clinic during a period of from four to eight weeks, and finally wandered away with still some discharge and shreds present. This would make a list of 65 cases in which the results were as follows: Cases cured in four weeks, 10, or 15 per cent.; cases cured in six weeks and under, 15, or 23 per cent.; cases practically cured as there was no discharge though there were some shreds in the urine at the end of from four to eight weeks, 20, or 30 per cent.; cases not cured in from four to eight weeks, 20, or 30 per cent. It would not be fair, then, in considering the use of mercurol in urethritis to draw too hasty conclusions, but to study more carefully this compound in different strengths and mixed in different ways.

It has been noticed that solution of mercurol decomposes in from three to four days, and it therefore will be interesting to ascertain of what value it will be after decomposition has taken place.[1] Is the fluid, then, anything more than ordinary water? or does the precipitate contain particles of mercury which might irritate the urethral mucous membrane? The answer to these questions I cannot give, and will leave them as subjects for further investigation. I will state, however, that in some cases a 1 per cent. solution gave rise to a considerable burning sensation, while in others a 2 per cent. and stronger solution did not. It is probable that this depended a great deal upon the freshness of the solution, or it might have depended upon the part of the bottle from which it was taken—that from near the top being mild, while that from the bottom might have been stronger due to its containing particles of mercury.

One of the most valuable observations that I have made in the reading of this report is the fact that only two cases have suffered from complications, one having developed gonorrhœal rheumatism and the other epididymitis. This in itself would tend to argue much in favour of the use of mercurol, for where is there any other solution or mixture that has been employed in the treatment of these diseases which does not show a greater percentage of complications? When we consider that many writers claim that in 20 per cent. of all cases of urethritis epididymitis occurs, the rate of 1 per cent. which is reported in these cases certainly would seem to argue much in its favour as a harmless yet efficient injection. Another interesting feature is that in only one of the 100 cases was there any marked posterior urethritis, in which case there were the ordinary symptoms of frequency of urination, tenesmus, &c., which did not occur in the other 99. It is probable that in most cases of urethritis—that is, in from 80 per cent. to 90 per cent.—the disease travels down to the posterior urethra, but that in no more than 20 per cent. of them are there any disagreeably acute symptoms, while in this group of 100 cases only 1 per cent. have proved troublesome. Therefore, it would seem that mercurol probably quickly destroys the gonococcus, lessens the severity of the inflammation, and tends to prevent the development of

[1] Since writing this paragraph I have been informed by the manufacturers of mercurol that this difficulty has been obviated, and that the solutions are now more stable.

complications, but does not possess the power of entirely stopping the discharge in all cases; and it would therefore seem that after the discharge has developed into a moisture and gonococci are no longer found in it, or in urethral shreds in the urine, that it might be better to change from a mercurol solution to a mild astringent one.

In conclusion, it might be well to say from a comparative study of the different methods of treating gonorrhœa that it would seem that mercurol is an advance on the old methods of treatment by balsamics and astringent injections.

New York.

BERI-BERI.

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FOR several years past it has been my lot in the course of ordinary professional work to have rather exceptional opportunities of observing and treating this somewhat obscure disease, and in view of the now not infrequent discussion as to its etiology, symptoms, and real character the following notes may be of some interest and possible value. When met with in Falmouth the disease is, as a rule, in an advanced state, and since we have generally only the comparatively uneducated observations of a captain or mate, or even fellow-seamen, on which to rely it is difficult to get a correct knowledge of its early history. On analysis of the facts that have come under my notice one of these two following conclusions is apparent—viz., (1) the beri-beri which reaches us is not the same as the beri-beri of the Malay Peninsula and elsewhere; and (2) beri-beri is not epidemic. Personally I incline to the former belief. I intend discussing the disease as it comes to us generally on vessels that have had a lengthy voyage and have passed through the tropics. Traders in the colder climates are far more liable to scurvy than to beri-beri, though, as is well known, the crews of American whalers are by no means free from attack. I have gathered that from 45 to 70 days out is the time when the disease first shows itself; the statement of captains that it seldom appears in the tropics but soon after leaving them is probably of no moment and only points to its slow onset. Another fact in support of an insidious attack is the statement that the manifestation of the disease is almost coincident with the appearance of the rice insect which is first seen in from 50 to 70 days.

Many theories have been advanced and all of them seem plausible enough till tested by the light of practical experience. Cornellisen and Sugensya go so far as to assert that the cause is a septic organism affecting clothes and woodwork. Now, during all the years that cases of beri-beri have been landed at the port of Falmouth no preventative means have ever been taken to check its spread. The patients have been admitted into the general wards of that most worthy institution the Royal Cornwall Sailors' Home, and not a single fresh case has occurred from infection. Then, again, ships that have landed sufferers have been known to go for years without a recurrence of the disease. For example, in 1896 a Norwegian barque was in at Falmouth with some of the crew down with beri-beri. She called again in December, 1899. She had been quite free from beri-beri in the long interval. Beyond the removal of the sick and the cleansing of the water-tanks nothing had been done on the occasion of her first call. Strange to say she was 120 days home on her second voyage from the same port whence three years before she had arrived with the disease.

To take another example, the German barque *Spica*, from Punta Arenas, put in here on Nov. 13th, 1897, with one case on board. I learnt from the patient who was landed here that he shipped at Punta Arenas where he had been in hospital to be treated for this very disease. He had lived and slept in the forecastle with the other sailors, all of whom were perfectly well on arrival here. I could give similar instances, but have, I think, sufficiently discounted the infection theory. Anderson attributes the cause to bad hygiene. This seems scarcely probable, as with very few exceptions it will be seen from the chart appended that the ships upon which cases of beri-beri have occurred were in a good sanitary condition although the ventilation might have been improved. The bilge-water, galleys, forecastle, and water-tanks were all in a satisfactory state, even when the majority of the crew were stricken down. I am certainly disposed to think that bad sanitation facilitates an outbreak of the disease by lowering the general health, but I do not think it causes it.

The captain of the Norwegian barque *Lotus*, 150 days home from San Juan del Sur, records that when in 33·34 south latitude the vessel was becalmed in a black fog; 14 days afterwards beri-beri appeared. In such a latitude the fog might have been of a malarial nature, and the incident might be quoted in evidence of Simmons's and Schebe's theory, but the several captains I have questioned merely look on this as a coincidence and can give no similar experience.

Ogata and Lacerdas suggest bad rice. To this supposition I do not attach much importance because (1) very little rice is eaten; (2) the captains invariably assert that the rice is perfectly good; (3) on examination I have always found it excellent on ships where beri-beri has broken out; and (4) out of 51 ships arriving here during 1899 with rice cargoes only four had cases of beri-beri on board. Pekelharing, Ogata, and Taylor all advance the theory that the anæmia is due to a micro-organism giving rise to a poison acting like muscarine and so causing acidity and disordered action of the sweat glands. Great authorities as these three undoubtedly are they nevertheless fail to find the same micro-organism. The first-named attributes the disorder to a diplococcus, Ogata to a bacillus, and Taylor to a spirillus. Other well-known authorities have failed to find any micro-organism at all.

In face of these different results of independent investigation it is hard to discriminate. Pekelharing says that diplococci are associated with the soil and overcrowded dwellings. Taylor maintains that spirilli are found in the soil, bad fish, and bad rice. These, though, compare unfavourably with the miasma theory of Simmons and Schebe. Let us take it for granted that the three authorities mentioned have found three separate micro-organisms which will produce the same effect, and also that the said organisms work in crowded dwellings and contaminated soil, and it obviously follows from the foregoing remarks that the incubation period is from 45 to 70 days. Now in comparison with enteric fever (from 5 to 21 days), malaria (from 5 to 21 days), and yellow fever (from 1 to 18 days), such a lengthy period seems unlikely. Then, again, how can this case be accounted for? A man brought home by the German barque *Spica* developed the disease on the voyage out from London before he could possibly have contracted it at any port of call. Unfortunately I could get no authentic information as to the food and sanitation of the vessel except that lime-juice was served out five days after leaving London.

As I have given my reason for doubting the theories of others it is right that I should suggest a cause myself. On British ships each man is supplied with one gill of vinegar a week, or half an ounce per day, and in the tropics lime-juice is also issued at the captain's discretion, failing the presence of a medical officer. Each man must have six ounces per week, making one and a half ounces of acidity per diem. Now when we consider what the effect of the tropical weather must have on tinned and salted meats, fruit, and vegetables, it makes me shudder to think of the decomposition and the manufacture of ptomaine which must go on—that is to say, during prolonged voyages of sailing ships through the tropics—and what a chance any alkaloids must have of asserting themselves in the disarranged stomachs of sailors who have been cooped up in a limited space on none too good a diet, who have had to drink tanked and often impure water, and whose bodies have been carefully prepared for fermentation and other disorders with vinegar and lime-juice. Let it not be thought that I am overstating the case. I am not. I merely give facts.

Now supposing our own toxic products are not ample enough to allow of this—which, by the way, is quite contrary to Sir T. Lauder Brunton's teaching—we might argue that the toxic alkaloids, such as muscarine, neurine, and neuridine, that one would be likely to absorb from such a diet as the ordinary sailor has might gain the upper hand. Pekelharing says it is due to a diplococcus acting like muscarine. Why not muscarine or one of its allies? We are well aware that acids taken in continued doses will disarrange the natural gastric secretion and cause fermentation leading to the production of gases and other noxious products as well as acids such as acetic, butyric, and lactic. Having established this fact we then come to consider the point of auto-infection. We are now comparatively alive to the important

results produced by the absorption from the intestinal canal of poisonous matters introduced from without, and we ought to be equally ready to appreciate the absorption by the intestinal canal of substances generated within, either by fermentation or imperfect digestion. It has been proved by recorded observations that sulphuretted hydrogen may be produced in the digestive tract, and Dremarquay has shown that it is very quickly absorbed into the blood. We are also aware that sulphuretted hydrogen will seize upon, and combine with, the oxygen, leaving the reduced hæmoglobin to be dissolved out of the corpuscles and diffused through the degenerated blood, both these conditions if carried to any extent being incompatible with life. Again, the citric acid of the lemon and the

As regards the symptoms, there is but little chance of gaining any definite or reliable information of the early history of the disease because the stories of the patient and his captain seldom agree. During the first week or few days the sufferer complains of a general malaise, loss of appetite, headache, &c. There is little, if any, rise of temperature. One case of 100° F. and one of 99° F. have been recorded by captains who kept a chart. I have myself taken the temperature in between 60 and 70 cases, all in a somewhat advanced stage, and I have come to the conclusion that a rise of temperature is an exception and not the rule. The malaise is generally followed by a strange loss of power in the lower limbs and complained of at first as a stiffness. This loss of power slowly increases, so that

A CHART ILLUSTRATING FEATURES IN CASES OF BERI-BERI ON BOARD 20 SHIPS.

Name of ship.	Country.	Port left.	Days on voyage.	Cargo.	Number of crew.	Number of cases.	Number of deaths.	Condition of water on board.	Remarks.
1896.									
June 2nd, *Petrus.*	Norwegian.	Buenos Ayres.	87	—	15	4	—	?	Dropsy of lower extremities. Probably beri-beri. South of the tropics.
August 20th, *Areola.*	,,	South America.	106	—	13	1	—	?	Anasarca. In the tropics.
August 22nd, *Freia.*	German.	Punta Arenas.	185	—	21	2	1	—	Provisions short.
Oct. 18th, *Congo.*	Norwegian.	Bangkok.	—	—	12	All hands.	1	Good.	North of the tropics.
Nov. 18th, *Vigar.*	,,	Yucatan.	—	Logwood.	16	4	2	Bad.	Provisions short. In the tropics.
Nov. 23th, *Peer Gynt.*	,,	Tobasco.	105	—	10	1 (captain).	—	—	Sanitary condition good.
Dec. 13th, *Lodestar.*	English.	Rangoon.	195	Rice.	20	All.	3	Good.	Food and water good; sanitary condition good. In the tropics.
1897.									
Feb. 21st, *Argentina.*	Norwegian.	,,	—	Teakwood.	11	—	1	,,	Sanitary condition good. In the tropics.
April 11th, *Taurus.*	,,	Black River.	40	Logwood.	10	1	—	,,	Sanitary condition good.
August 8th, *Haubet.*	,,	Yucatan.	?	,,	15	1	—	,,	Sanitary condition good. In the tropics.
Nov. 13th, *Spica.*	German.	Punta Arenas.	190	Cedar-wood.	19	1	—	,,	Sanitary condition good. Nearly on equator.
Nov. 21st, *Agatha.*	Norwegian.	Pensacola.	—	Dyewood.	10	3	—	Bad.	Sanitary condition good. Did not pass through the tropics.
1898.									
Jan. 19th, *Waldemar.*	,,	Yucatan.	122	Logwood.	14	3	—	,,	Captain died in hospital in the tropics.
April 7th, *Werner.*	,,	?	142	Teakwood.	12	8	1	,,	Food good, tinned, and plentiful.
August 6th, *Phez Ugland.*	,,	Bassein.	—	Rice.	—	10	1	Filthy.	Rice insects appeared about 30 days out when the first man fell sick. In the tropics.
Oct. 11th, *Copernicus.*	German.	?	—	Rice.	18	4	2	Good.	Ship full of the rice insect; appeared 40 days out, as did sickness.
Nov. 18th, *Janette François.*	Dutch.	Java.	?	Sugar.	23	7	2	,,	In the tropics.
1899.									
March 4th, *Lotus.*	Norwegian.	San Juan del Sur.	152	Cedar.	12	3	—	,,	Black fog, 33 or 4 S. latitude; first disease broke out 14 days after. In the tropics.
August 28th, *Belgon.*	,,	Lagoons, Mexico.	?	?	10	2	—	,,	Port not in the tropics, but ship passed through the tropics.
Sept. 16th. *Taurus.*	,,	Casabella.	50	Resin.	10	4	4	Bad.	In the tropics.

diluted acetic acid are known to have a peculiar deoxidising effect on the blood by converting the blood in part into a carbonate at the expense of the hæmoglobin. Thus $2K_3C_6H_5O_7 + O_{15}$ (from hæmoglobin) $= 3K_2CO_3 + 9CO_2 + 5H_2O$. Having reached this stage common sense must open our eyes to the fact that the lessening of the resistance to auto-infection is increased to a most dangerous extent. By this I mean the elimination of the toxic products by the excretory organs and the destruction of the said products by oxygenation, which consists in a continuous combustion of the leucomaines and the other animal alkaloids by the oxygenation of the blood in whose current they are consumed and burned.

the men have to hobble about as best they can with the aid of ropes, deckhouses, hatches, &c. About this time, too, in about 50 per cent. of the cases a numbness of the lower extremities is often felt and a tickling or pricking sensation is complained of. These symptoms are generally followed by an œdema of the dorsum of the foot or ankle which spreads slowly up the limbs to the trunk. I once saw a patient who was simply water-logged. He would "pit" anywhere below the neck, but his face and head were quite natural. In the majority of cases the feet and legs are attacked first, but I have seen anasarca of the scrotum, abdomen, and chest with no œdema whatever in the legs. Many cases even have no œdema at all and are evidently the dry beri-beri of some authorities who state that the patients

suffer severely from neuritis. When the œdema subsides the true state of the neurotic mischief becomes manifest; the legs are most sensitive to tactile impression, and have a dull, aching pain which the sailors bitterly complain of.

To tabulate further and general symptoms for the sake of brevity and conciseness, the tongue is generally clean, pale, flabby, and frequently tooth-indented; the gums are pale, not spongy or swollen; the voice is natural; the breath is offensive, as from an ordinary disturbed stomach; the bowels are as a rule freely open (in a few instances they are irregular); and the urine in amount is normal and its colour is bright. I have tested 20 samples and found albumin in two of them. A colleague of mine had one bad case of albuminuria to treat. With regard to the sweat glands, Pekelharing speaks of the disorder of these glands. I believe they are active in the early stages as I have had many complaints of cold sweats suffered then. The pulse is full, strong, and slightly quickened, ranging from 90 to 120. The respiration is quickened, but inspiration and expiration are usually properly proportionate. There is palpitation of the heart and epigastric pulsation is felt. The commonest forms of cardiac lesion in my experience have been dilatation of the left ventricle and mitral regurgitation, though I have heard murmurs over most of the orifices and bruit of the carotids. The pupils react normally. I have not come across a case having Argyll-Robertson's pupil. The smell is normal. The sphincters are unaffected. The deeper reflexes in well-marked cases are lost but I have got distinct knee jerk and ankle clonus in mild cases. The extensor muscles quickly atrophy. Foot-drop is common and gives the patient a characteristic gait; he lifts his knees high and seems to drop his foot down anywhere and with no apparent control. I have not seen more than one well-marked instance of wrist-drop and but a few slight ones. I cannot say if Romberg's sign is present or not, but closing the eyes and turning will ensure a fall, probably from weakness.

In conclusion, I do not for a moment believe that beri-beri, as we know it, is infectious or contagious; in fact, I do not consider that what we in England call beri-beri *is* beri-beri—at least, not such as is met with in foreign countries. I put forward a theory that the disease that reaches us is due to an alkaloidal poison fanned into flame by the disarranged digestion of sailors who are kept on improper diet, and in that case by properly dieting the vessels and supplying the captains with iron and digitalis tabloids the disease in all probability would be reduced to a considerable extent if not stamped out. The necessity for the proper dieting of persons on board vessels is of course no original suggestion of mine; it has answered admirably in the Japanese navy and I see no reason why the British sailor should not have a similar fortunate experience.

Falmouth.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A FATAL CASE OF POISONING BY PARALDEHYDE.

BY LOVELL DRAGE, M.D. OXON., M.R.C.S. ENG.

As I believe that there is no case on record of death from poisoning by paraldehyde I send the following for publication in THE LANCET, having held an inquest upon the body of a woman who died from this cause.

The history of the patient was that she was 46 years of age and had suffered for some years from chronic emphysema, chronic bronchitis, and heart disease. She had been in the habit of using drugs of various kinds to excess. She had recently returned home from abroad, and on the day when a nurse took up her duties there was in the house a three-ounce bottle of paraldehyde besides another bottle containing six ounces of the drug. According to the nurse's statement, she asked the medical man in attendance how much of this drug was to be administered, and the order was two teaspoonfuls in a wine-glassful of water thrice during the night. However, in the course of the 24 hours five doses of two drachms each were administered. The patient had a constant craving for the drug. At the beginning of the next 24 hours one teaspoonful was given and this was repeated in about four hours' time and again after another four hours had elapsed. Roughly speaking, from midnight to midnight 10 drachms of the drug were used and in the next nine hours three drachms. I am inclined to think that possibly nearly twice as much was really given, but this is only a guess. The symptoms noted by the nurse were restlessness and some degree of delirium and constant craving for the drug.

About two hours after the nurse had given the last dose the patient possessed herself of another bottle of the drug containing at least six ounces. The bottle had a label pasted on it; on the label was printed the name of a respectable firm of drapers in London and the name of a man who was presumably a qualified chemist. Nothing but the word "Paraldehyde" was written on the label. The nurse estimated the quantity of the drug consumed by the patient at about two ounces. After the patient had taken this the nurse found on returning to the room that her condition was serious and she sent for a medical man. The practitioner who was in attendance and who had seen the patient on the arrival of the nurse was not at home, and his assistant, who came to the inquest, attended instead. This gentleman noted the following symptoms: unconsciousness, profuse perspiration, rather deep cyanosis, intermittent pulse, and shallow breathing, about normal in time. He administered strychnine hypodermically and some improvement in the patient's condition took place, but death occurred about three hours after the lethal dose was taken. Unfortunately, the nurse's statements, except as to the condition of the patient, were for the most part uncorroborated. According to this statement 13 drachms of the drug were administered in the course of 33 hours; at all events, enough was administered to produce the mental condition associated with the action of the drug before the patient herself took the fatal dose which was possibly less than the amount estimated.

Binz, in his work on Pharmacology, mentions that according to the German Pharmacopœia 85 drops are the maximum single dose and 170 drops the maximum quantity to be given in 24 hours. Having used the drug in my own practice to a considerable extent these doses are, in my opinion, correct, and I venture to call the serious attention of the members of the medical profession to the deplorable condition of affairs illustrated by the facts of this case. It must be common knowledge that drugs of all degrees of potency can be obtained by the ignorant in unlimited quantities from all sorts of sources. Nurses not infrequently bring them when they come into the houses of sickness and recommend them to the patients whom they come to nurse. The habit of taking drugs, especially those which act on one or other part of the nervous system, is on the increase, and I ask in all seriousness, Are the members of the medical profession sufficiently careful in their methods of prescribing, and especially with reference to the ordering, of proprietary remedies and drugs in the form of compressed lozenges and other articles of that genus? The fact is, so many lethal drugs, or drugs that may be lethal if not prescribed with adequate precaution, are introduced and advertised as harmless that it behoves us to proceed warily.

Hatfield.

A CASE OF PHOSPHORUS POISONING.

BY WILLIAM E. NEWEY, M.R.C.S. ENG., L.S.A.

THE following case may prove useful and interesting some of the readers of THE LANCET. On August 11th I was called to see a man who was suffering from vomiting and intense burning pain in the stomach and bowels. His history was that on the 7th, when "in drink," he had swallowed three-pennyworth of rat-killer. Immediately after swallowing it he complained of violent pain in the stomach and sickness. He was given salt and hot water, after which he was very sick and vomited freely and expressed himself relieved. On the next day he was a little better, although he felt far from well; he, however, dressed himself and walked about. On the 11th he was taken much worse and I was sent for. When I saw him his temperature was normal, he was quite conscious and coherent, and his pulse was 90. He complained of thirst, constant vomiting, and great pain in the stomach and abdomen. An examination of the vomit proved it to consist wholly of altered blood of a very dark colour. His stools also were dark and pitchy in character. He was given the usual remedies, but they were of no avail,

and he quietly sank and died on the following Tuesday, the 14th, having lived exactly a week after swallowing the poison. The vomiting of dark-coloured blood continued up to the time of his death.

A post-mortem examination was made 24 hours after death. The weather was very warm but there were no signs of putrefaction. Very slight rigor mortis, if any, was perceptible. The body presented a most curious and interesting appearance. The whole of the neck in its entire circumference, back, and sides bore the appearance of having been stained in a deep solution of Prussian blue, the colour being most intense and brilliant; it was not mottled but uniformly stained. The arms and legs showed an icteric tinge; their superficial veins looked as though they had been injected with a solution of Prussian blue paint and were most beautifully mapped out. On opening the body the chief points noticed were as follows. The stomach contained half a pint of liquid blood; it was deeply coloured blue; it showed softenings and ulcerations in patches, and it was thickened in other parts. The whole of the intestines showed signs of an irritant poison; they were deeply pigmented with the colour, and the contents were dark and pitchy. The transverse colon was intensely inflamed and the fat of the great omentum showed bright extravasations of blood and was most striking in appearance. The heart, liver, and kidneys showed signs of commencing fatty degeneration. The lungs and the liver were deeply coloured blue. The brain was rather anæmic, soft, and almost diffluent in parts.

Dudley.

MULTIPLE WARTS CURED BY REVACCINATION.

BY J. DIBBLE STAPLE, M.R.C.S. ENG., L.S.A.,
PUBLIC VACCINATOR FOR THE ASHLEY DISTRICT OF THE BRISTOL UNION

THE relatives of a girl, aged 15 years, consulted me in reference to a number of warts which she had on both of her hands. She had herself counted 94 on the right hand. Her parents had tried several "popular" remedies but with no satisfactory result. Having recently read in one of the medical journals that a number of warts had been cured in a patient who had been revaccinated, I determined, with the consent of the relatives, to give this treatment a trial. I revaccinated the patient on June 1st. The operation was successful, but no effect was produced upon the warts until seven weeks after, when, to use the description of the patient, the warts gradually "disappeared," leaving temporary white spots, and when I saw the patient on August 30th she had no trace of them.

Bristol.

VACCINATION IN MERTHYR TYDVIL.—At the meeting of the Merthyr Tydvil board of guardians held on Sept. 1st it was reported that for the last six months of 1899, in the various districts of the union, there had been 2182 births. Of these children 1484 were successfully vaccinated, three were insusceptible, 437 died unvaccinated, and 117 were medically postponed. There were 12 cases of conscientious objection, and 85 remained unaccounted for. The cases unaccounted for occurred in Merthyr and Gelligaer, and the clerk was instructed to write to the vaccination officers of these respective districts calling their attention to the large proportion of these cases.

FOREIGN UNIVERSITY INTELLIGENCE.—*Athens:* A chair of Hygiene and Bacteriology has been created to which Dr. Savas, a military staff surgeon, has been appointed.—*Berlin:* Dr. Emil Grunmach has been promoted to an Extraordinary Professorship of Medicine.—*Bologna:* Dr. Nicola Giannettasio has been recognised as *privat-docent* of Clinical Surgery and Operative Medicine.—*Greifswald:* Dr. Hugo Lüthje of Marburg has been recognised as *privat-docent* of Internal Medicine.—*Halle:* Dr. Fritz Haasler, *privat-docent*, has been granted the title of Professor.—*Heidelberg:* Dr. Fürbringer of Jena has been appointed to succeed Professor Gegenbaur in the chair of Anatomy.—*Munich:* Dr. Moritz Hofmann has been appointed to the chair of Forensic Medicine.—*Rome:* Dr. Lorenzo Bonomo has been recognised as *privat-docent* of Medical Pathology, and Dr. Mario Ponticaccia as *privat-docent* of Pediatry.—*Strasburg:* Dr. Erwin Faust has been recognised as *privat-docent* of Pharmacology.—*Utrecht:* Dr. Ziehen of Jena has been appointed to the chair of Psychiatry.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

WESTMINSTER HOSPITAL.

TWO CASES OF GANGRENE OF THE LUNG TREATED BY PARTIAL EXCISION.

(Under the care of Dr. W. MURRELL and Mr. WALTER SPENCER.)

THE rarity of gangrene of the lung is indicated by the statistics of Waller[1] who in 2663 post-mortem examinations, including 895 cases of pulmonary disease, found only two of gangrene—i.e., less than 0·1 per cent. of the whole number; but Boudet[2] in 511 post-mortem examinations found nine cases of gangrene. The value of operation in pulmonary gangrene is undoubted. Reclus[3] says that in cases treated by operation the mortality is only 25 per cent., while in cases treated medicinally it is 75 per cent.

CASE 1.—A labourer, aged 32 years, was admitted into the Westminster Hospital on June 13th, 1900, complaining of pain in the right side which was increased by coughing. He stated that he had been perfectly well until three months previously when he contracted a cough which was attended with much expectoration. He had lost flesh and his appetite was bad. On admission it was found that there was dulness all over both backs with scattered moist sounds. At the right base posteriorly the dulness was more intense and the respiratory sounds were absent although friction could be detected here and there. The heart sounds were normal. The temperature ranged from 99° F. in the morning to 101° in the evening. The expectoration was of a peculiarly offensive character and the odour, in spite of the free use of antiseptic inhalations, could be detected in the corridors outside the ward. There was no doubt that the base of the right lung was gangrenous. The patient continued to lose flesh, was unable to take nourishment, and was in a critical condition. On the 28th the temperature ranged from 98·2° in the morning to 101·4° in the evening. The pulse was 112, feeble, and easily compressed and the respirations were 36. The expectoration, which could be separated into the typical three layers, contained streptococci and sarcinæ but no tubercle bacilli. The specific gravity of the urine was 1020; it was acid and contained neither sugar nor albumin. On June 29th Mr. Walter Spencer resected the seventh rib on the affected side and removed a large quantity of fœtid pus with portions of gangrenous lung. The pulse on the evening of the operation was 118 and the respirations were 56. The following night the temperature was 100°, the pulse was 134, and the respirations were 49. The patient rallied for a time, but died on July 3rd.

Necropsy.—At the post-mortem examination the following appearances were found. There were adhesions in both pleural cavities, but most extensively on the right side. On the right side behind the pleura was gangrenous and sloughy over a space as large as a man's hand. The upper lobe of the right lung was normal throughout but œdematous. The middle and lower lobes were coherent and in the lower part of the latter there was a gangrenous focus of the size of a Tangerine orange. Around, the lung was semi-solid with a tendency to break down. The left lower lobe showed a small cavity in the upper part of a distinctly pyæmic character. There was no evidence of tuberculosis in the lungs. Around the cavity in the left lung the pulmonary tissue was intensely œdematous and looked as if it were in a state of grey hepatisation, but it still contained air as indicated by the fact that some portions did not sink in water. The larynx, trachea, and bronchi were full of blood-stained mucus. There

[1] Prager Vierteljahrschrift, 1846, Band xi., p. 63.
[2] Archiv Générales, 1843, vol. iii.
[3] Revue de Thérapeutique Médico-Chirurgicale, Nov. 1st, 1896.

was no dilatation of the bronchial tubes. The bronchial glands were considerably enlarged.

CASE 2.—A married woman, aged 28 years, was admitted into the Westminster Hospital on June 2nd, 1900, suffering from pneumonia involving the base of the right lung. Her family history was not good; her father, sisters, and one brother had died from chest complaints which were probably tuberculous in origin, although the evidence on this point was inconclusive. She was taken ill suddenly on May 25th; there was no rigor, but there was acute pain on the right side which confined her to bed. On admission her temperature was 101·4° F. and on the following evening it was 102·8°. The expectoration was glutinous and rusty and it contained no tubercle bacilli. On examination it was found that there was deficient movement over the whole of the right side. There was a patch of dulness over the fifth and sixth ribs laterally and posteriorly; the dulness extended from the base of the lung to as high as the angle of the scapula. Vocal fremitus was absent and no respiratory sounds could be detected at the base, but in the upper part of the lung there were abundant moist râles. There were no friction sounds and the heart was not displaced. The left lung was apparently normal. No tubercle bacilli were found in the sputum. The urine had a specific gravity of 1026, was acid, and contained some albumin, but no sugar. The patient had no crisis and the temperature usually reached 103° in the evening. On June 18th it was noticed that dulness at the base of the right lung as high as the angle of the scapula still continued. Over this area vocal fremitus was absent and the breath-sounds were only faintly audible. Whilst the patient was being percussed she had a violent fit of coughing and expectorated a considerable quantity of thick yellow matter having a distinctly gangrenous odour. On the 24th, there being no improvement in her physical signs, the needle of a hypodermic syringe was inserted and some yellow offensive pus was withdrawn. On June 26th, under nitrous oxide gas and ether, Mr. Walter Spencer removed a portion of the eighth rib in the post-scapular line on the affected side. A cavity was opened which involved the base of the lung and communicated with a bronchus full of pus and gangrenous sloughs. The sloughs were drawn out, iodoform emulsion was injected, and an iodoform plug was inserted. In the evening the temperature was 100°, on the following day it was 100·4°, and on the third day 101·2°. The wound gradually healed and the discharge became less, but the progress towards recovery was slow. On July 26th tubercle bacilli were found in the expectoration in small numbers. There was a sinus about four inches in length and half an inch in diameter. This should have been opened up, but the patient declined a second operation and was sent to a convalescent home.

Remarks by Dr. MURRELL.—Cases of gangrene of the lung are not common. I have looked through the records of the hospital for a period of ten years and find that during that time 10,000 medical and about the same number of surgical patients have been treated in the wards. I have consulted the records of 1400 post-mortem examinations made during the last seven years. Out of this large number of cases I find only one of gangrene of the lung. I do not attach much importance to these figures, for there may have been many other cases tabulated under the name of the primary disease. Still the fact remains that gangrene of the lung is not a common disease. Some people would go even further and say that it is not entitled to be regarded as a disease at all, seeing that it never occurs as a primary affection. It may follow in the wake of acute lobar pneumonia and less commonly of phthisis. It may be lighted up by the fœtid contents of a bronchiectatic cavity or it may be due to embolism or thrombosis of the pulmonary artery. It may follow aspiration pneumonia and is sometimes the result of the inspiration of septic material originating in a cancer of the lung or larynx. Sometimes there is a direct invasion of the lung by contiguous diseases such as cancer of the œsophagus or of an abscess or suppurating hydatid. It may be a complication of pyæmia, otitis media, puerperal affections, or even bed-sores. In exceptional cases it is met with in the course of convalescence from long protracted illnesses, such as enteric fever. These exciting causes are common enough, and yet, as we have seen, gangrene of the lung is not common. It is a somewhat curious coincidence that these two cases should have occurred concurrently. In the majority of cases there is some predisposing cause, and this may be senile degeneration, marasmus from one of the intoxications, such as lead or mercurial poisoning, or alcoholism, or syphilis, or diabetes mellitus. In neither of these patients was there apparently any definite predisposing cause. The man was in the prime of life and there was no history of any previous illness. He was not alcoholic and the urine contained neither sugar nor albumin. In the case of the woman there was albumin in the urine, but it was small in quantity and disappeared before she left the hospital. The gangrene may be general, affecting the whole lung, but commonly there are only one or two necrotic foci. As a rule the gangrene is limited in extent, but rarely by a separating capsule. The symptoms are usually preceded by the symptoms and physical signs of the disease to which it is secondary. For example, it may begin with the physical signs of pneumonia, or phthisis, or malignant disease of the œsophagus. The characteristic sign is the intensely fœtid odour of the breath and expectoration. There is a fœtid odour in bronchiectasis, in advanced phthisis, and even in chronic bronchitis, but it never has the peculiar offensiveness of gangrene of the lung. In gangrene the expectoration contains not only the débris of the lung tissue but not uncommonly fragments of the lung itself. The general symptoms are a moderate degree of fever, a quick pulse and great depression, and constitutional disturbance. Medical treatment is of little avail, although antiseptic inhalations of carbolic acid, creasote, guaiacol, eucalyptus, and especially formic aldehyde may mask the smell. The only real relief and the only hope of recovery is the removal by surgical means of the gangrenous portion of the lung. This is the treatment which has been adopted in these cases.

LIVERPOOL WORKHOUSE HOSPITAL.

TREPHINING AND DRAINAGE IN AN APPARENTLY MORIBUND CASE OF STATUS EPILEPTICUS; RECOVERY.

(Under the care of Dr. W. ALEXANDER.)

IN the following interesting case the epileptiform convulsions appeared for the first time at 36 years of age and this fact was in itself very suggestive of a definite cerebral lesion, especially as there was a history of head injury. The affected area was localised by the right-sided twitchings and the correctness of the diagnosis was proved by the success of the treatment. It is probable that several distinct conditions are included under the term "status epilepticus" and only some of these are amenable to surgical interference. For the notes of the case we are indebted to Dr. W. T. D. Allen, senior resident medical officer.

A woman, aged 36 years, was admitted into the Liverpool Workhouse Hospital on July 4th, 1900, in a semi-unconscious state, suffering from very severe epileptiform convulsions. From her previous history the patient appeared to have been in good health until the previous February except for occasional attacks of articular rheumatism. She had been very much addicted to drink and in February she was taken into custody for this cause, and then it is stated that a policeman struck her on the head with his bâton. Her head became swollen and she was treated in the prison hospital. After two weeks in prison she was transferred to the workhouse hospital where she had an epileptiform fit which lasted for 15 minutes. The convulsions involved the limbs on both sides of the body and the patient was in a rather stupid condition for a day and a half after the fit. She made a gradual recovery and was able to resume her occupation in 10 days. She had never had a fit of any kind previously to this time. During the next four months she was in fair health except for a pain in the head which was at times very severe. On July 1st the convulsions began again and continued at very short intervals for four days until she was taken to the workhouse hospital. On admission there the patient was semi-unconscious and during 20 hours had over 40 fits. These began with twitching of the muscles of the lower part of her face on the right side and then spread to the right hand, arm, and leg. The corneal reflex was absent and the pupils were directed towards the right side. Each fit lasted for three or four minutes. On July 5th the patient, who appeared to be moribund, was trephined by Dr. Alexander over the upper motor area on the left side. The dura mater bulged into the opening when the piece of bone one inch across was removed. The dura mater was opened; the cerebral veins were much enlarged and lay bathed in a layer of fluid a quarter of an inch thick. The

fluid was held in position in the meshes of arachnoid and pia mater and when the meshes were pricked the fluid ran away in a clear sparkling stream. As the brain seemed to be healthy beneath and there were no signs of any gross lesion such as cerebral tumour or bone injury or disease, a double cyanide gauze drain was placed in contact with the opening in the membranes and the rest of the wound was closed. After the operation the patient had several severe fits and these continued for three days, but gradually diminished in severity and frequency. Since then she has had no return of convulsions and the pains in her head, which were at first troublesome, have passed away. The scalp wound is now healed and the patient is quite well and strong.

Remarks by Dr. ALEXANDER.—In the presence of deep unconsciousness in status epilepticus the medical man often feels quite helpless. Bleeding is often useless because the blood will not flow and oxygen or chloroform makes no impression. In such cases the compressed cerebral hemispheres may be relieved, either, as in this case, by drainage of the serous effusion that sometimes exists or in others by the venesection of the congested cerebral veins. The operation itself under aseptic precautions is so harmless that its performance is more than justified under such serious conditions as the above case presented.

GENERAL HOSPITAL, BIRMINGHAM.

A CASE OF THROMBOSIS OF THE LEFT VENTRICLE WITH MULTIPLE EMBOLI AND GANGRENE OF THE LEGS.

(Under the care of Mr. T. F. CHAVASSE.)

FOR the notes of the case we are indebted to Mr. F. V. Milward, resident surgical officer.

The patient was a countryman, aged 57 years; he was well nourished and to all appearances must have been robust until the present illness commenced. He stated that he had never been ill in his life. Three weeks before his admission to hospital on July 12th, having previously had some indefinite pains in his legs, he noticed that his right foot had become cold in the night. Blueness and mottling succeeded the initial pallor and he was brought to the hospital with well-marked gangrene of the right foot. There was no line of demarcation, nor did one form subsequently, and putrefactive processes never became much advanced, the skin being free from blebs. Constitutional disturbance was more severe than the local condition seemed to warrant. The patient was apathetic, the pulse was very feeble, the tongue was furred, and diarrhœa was present. The urine contained a cloud of albumin and many granular casts, but no sugar. No abnormal sounds could be detected either in the heart or the lungs. Two days before death gangrene made its appearance in the left foot and leg, and this, together with the cardiac depression and the presence of albumin in the urine, put all idea of surgical treatment out of the question. The patient gradually sank and died on the 16th from exhaustion.

Necropsy.—A post-mortem examination made on the 17th revealed the following appearances. There were well-marked gangrene of the left foot and leg and early gangrene of the right foot. The heart weighed 14 ounces. The left ventricle upon being opened was found to contain an ante-mortem clot of the size of a hen's egg; it was somewhat pyriform in shape, the base being attached to the apex of the ventricle and obscuring the posterior set of musculi papillares and chordæ tendineæ, so that its apex almost touched the posterior flap of the mitral valve. There was some chronic thickening of the aortic and mitral cusps, but there were no recent vegetations. The kidneys contained numerous infarcts of all sizes and in various stages of organisation. The spleen (five ounces) was converted entirely into one large infarct. There was a small and quite recent embolus in the left middle cerebral artery. An examination of the vessels of the limbs showed complete thrombosis of the veins in the left leg from the middle of the thigh downwards. The thrombus was becoming organised. There was also thrombosis of the left posterior tibial artery and of the right popliteal artery. No emboli were discovered in either vessel, but they had probably become indistinguishable through subsequent organisation of the thrombi.

Reviews and Notices of Books.

The Medical Diseases of Childhood. By NATHAN OPPENHEIM, A.B. Harv., M.D. Coll. P. & S., N.Y., Attending Physician to the Children's Department of Mount Sinai Hospital Dispensary. Illustrated. New York and London: Macmillan Company. 1900. Pp. 653. Price 21*s.*

THE object of the author of this work has been to write a book on the diseases of children which will tend to promote a greater use of logic and a lessened reliance upon empirical methods than have formerly been common. He quite rightly draws attention to the fact that the tendency of our thought in the present time is in the direction of the accurate recognition of abnormal conditions, but we cannot agree with his deduction from this statement. He says: "For when this is accomplished (viz., the accurate recognition of abnormal conditions), the treatment, so far as it is elaborated, follows as a matter of course." It must be confessed that although our knowledge of pathology and bacteriology has greatly advanced, yet in many instances our therapeutics have not followed that advance. That further investigation may bring us eventually nearer to such a desideratum we do not deny, but at present the expression "as a matter of course" is utopian. Dr. Oppenheim goes on to remark: "The greatest stress in modern medicine has been laid upon the necessity of depicting lesions in the most graphic manner possible. Following out this idea the whole available space for illustrations in this book has been given up to micro-photographs of pathological sections, which have been thought to have a keener and greater didactic value than pictures of instruments, photographs of patients, and representations of surface changes." The author may certainly be congratulated on the result. These micro-photographs are one of the principal features of a very good book. They have been beautifully reproduced and they form one of the best series of such photographs which we have seen. The majority of micro-photographs leave much to be desired, but in those now before us the details are most plainly delineated, and characteristic specimens have been selected. It is an excellent plan to insert a micro-photograph of the normal structure of each organ, as is here done; it is most useful for comparison, and more especially is this the case with the stomach and intestines. These normal histological specimens are also beautifully reproduced. There are 101 original illustrations in half tone. Some of these are particularly good, such as the micro-photographs representing acute yellow atrophy of the liver, atelectasis with compensatory emphysema, and epidemic cerebro-spinal meningitis.

The clinical descriptions throughout the work are uniformly good and the pathology and etiology are thoroughly up to date. Some of the therapeutical measures suggested will hardly commend themselves, however, unless all other means fail. Lavage in various diseases of the stomach in the adult is strongly recommended by some authorities, but the majority of practitioners prefer to employ less unpleasant and usually equally efficacious remedies; much more would this principle hold with children. Dr. Oppenheim, however, advises lavage in the chronic gastritis of children and his description of the process would make the practitioner pause before adopting it. He adds: "As it may be necessary to continue this treatment for weeks the mother or nurse may be instructed in its details." Our sympathies certainly lie with the little patient. For purposes of differential diagnosis in cases of gastric disorders Dr. Oppenheim states that one of the best methods of differentiation is by means of a test meal, which is to consist of milk in infants, of bread-and-milk in somewhat older children, and of milk, bread, and meat in children of eight

or more years. Such methods of diagnosis, however, have not found general acceptance and the general belief is that equally good results may be obtained, except in very few cases, by means less calculated to inconvenience the patient.

Taking the book as a whole we have perused it with much pleasure. It is well written and we can cordially recommend it to those who wish special information in the medical diseases of childhood.

Practical Manual of Diseases of Women. By H. MACNAUGHTON JONES, M.D., M.Ch. R.U.I. Eighth edition, revised and enlarged. With 640 Illustrations and 28 Plates. London: Baillière, Tindall, and Cox. 1900. 8vo, cloth. Pp. 947. Price 18*s.* net.

THE eighth edition of this book certainly does credit to the publishers and printers. It is issued in a much more convenient size than was the last edition, and the binding and type leave little to be desired. When, however, we critically examine the part played by the author we must confess to a considerable amount of disappointment. We will at once admit that we have read many parts of the book with much profit and interest. It is not intended, however, solely for the specialist, but, as the title-page tells us, for the student and practitioner, and it is from their point of view that it must be judged. That the book contains an immense amount of information no one can deny. That such information has been arranged in a form suitable at any rate for the student few, we think, would be prepared to maintain.

The book is, as a manual, almost too much up to date. It contains practically everything new of any importance or otherwise that has been published in gynæcology since the last edition appeared. The result is that not a few theories, operations, and modes of treatment are included the actual value of which at the present time is quite uncertain, such, for example, as the vibration treatment of Jayle and De la Croix de Lavalette for uterine fibroids and adnexal affections. Many of the old statements to which we called attention as being present in the last edition are yet to be found. Dr. Macnaughton Jones still believes, apparently, that perimetritis, pelvic phlegmon, and uterine fibroids are amongst the results, direct and indirect, of uterine versions and flexions. It would be interesting to know the facts upon which these statements of the author are based. Several similar instances could be adduced, but these are, after all, but small matters and of but little weight in judging of the real merits of the book. The author has visited the clinics of most of the leading foreign gynæcologists and the experience gained he has included in various portions of his work. We do not remember ever to have seen a text-book in which the excerpts from other writers exist in so great an abundance as in this. As a means of ready reference for such gynæcologists as are unable to gain access to or to read the various extracts in the original the advantages of the work are undoubted. The want of proportion that exists between various chapters and sections is, however, very striking. A full account is given of the rare tumours known as endothelioma and gyroma, but when we turn to what is perhaps the most important part of any work on gynæcology —the chapter on Cancer of the Uterus—we find a curiously confused and involved account of medullary cancer, scirrhus, carcinoma, and epithelioma or cancroid, [without any attempt being made to distinguish clearly between the pathological and clinical varieties of the disease.

This new edition certainly bears eloquent testimony to the author's unbounded industry, but it is at the same time a striking example of how little industry avails in the production of a really good work unless it be combined with a systematic method and some power of determining the relative values of various facts and theories. The illustrations are very numerous and some of them are very good.

Encyclopädie der Haut- und Geschlechts-Krankheiten. (*Encyclopædia of Diseases of the Skin and Generative Organs.*) Edited by Professor LESSER. Leipsic: F. C. W. Vogel. 1900. Crown 4to. Pp. 548. Price 30 marks.

THE problem of how to keep the practitioner in touch with the vast and rapidly-growing store of medical knowledge becomes more difficult every year. The additions to it are unlimited and the practitioner wishes, or at all events is expected, to know much more than he and his patients were content with a few years ago, yet the number of books he will buy are limited by considerations of expense. Two coöperative methods of dealing with the difficulty are in vogue. In the one a "system" consisting of a number of more or less comprehensive essays by the different contributors is produced; in the other a dictionary is compiled. Each plan has its good points, and though personally we think that the "scrappiness" of the latter is not compensated for by its advantages, such as facility of reference and necessary conciseness, we admit that it is largely a matter of taste as to which of the two is to be preferred.

The editor of the volume before us has dealt with the problem on the lines of a dictionary with considerable success. He has been fortunate enough to secure the services of an able staff of contributors, among them Professor Finger, Professor Neisser, Professor Seifert, Professor Paschkis, and Professor von Zeissl, to mention only two or three at random, and the result of their labours is an excellent book. It resembles Quain's "Dictionary of Medicine" more perhaps than any other English work, but is on a larger scale. It is impossible in the space at our disposal to criticise in detail the work of the large number of writers employed (they number no fewer than 42). It varies in quality naturally, but on the whole maintains a high level and is thoroughly practical throughout. The articles are written clearly and tersely and on the subject of treatment both sections, that on dermatology in particular, are unexpectedly full. It has, however, two serious faults. The principle of the subdivision of labour is carried to an excessive degree. In a cursory examination we have found no fewer than 14 writers on syphilis and doubtless many more could be found by further research. The general course of the disease is described by Blaschko, galloping syphilis by von Zeissl, the congenital variety by Caspary, Lustgarten's bacillus by Rille, laryngeal syphilis by Heymann, syphilitic disease of the heart by Mracek, of the ear by Jansen, of the mouth by Seifert, of the eyes by Greeff, of the kidney by Ullmann, of the nerves by Laehr, of the bursæ by Isaac, leucoderma by Schäffer, while we are indebted to Wolff for an account of the principles on which the disease is treated. With such a multitude of contributors repetition is unavoidable and that there should be as little as there is speaks volumes for the editor's skilful supervision. One of the best articles in the volume is the one on Ear Disease by Dr. Jansen which we have just mentioned, and it is the only one to which is appended a list of references to current literature. This deficiency in bibliography is a grave defect in the book. The text cannot possibly cover more than a portion of the subjects dealt with, and the book as a work of reference loses half its value if it fails to indicate where further information may be found. In spite of these shortcomings the volume will be found to be a convenient and trustworthy cyclopædia. It forms one of a series of medical encyclopædias in course of publication by Vogel of Leipsic. Two volumes on midwifery and gynæcology and diseases of the ear have already appeared, while three others on diseases of the eye, hygiene, and general surgery are in the press. Each volume is quite

independent of the others, and the whole, judging by the sample before us, should form a most valuable addition to medical literature.

Étude sur la Lèpre au Brésil. (*A Study of Leprosy in Brazil.*) By Dr. JOSÉ DE MAGALHAES. Rio de Janeiro: Pereira Braga and Co. 1900. Demy 8vo. Pp. 186.

THE object of this book is to combat some of the conclusions arrived at by the Conference on Leprosy held at Berlin in 1897. The irritation left by this (in some ways unfortunate) conference lends a tone of bitterness to the author's remarks, which is accentuated, perhaps, by the consciousness that the majority of leprologists have abandoned the views which he holds and he himself is a voice crying in a heedless wilderness.

Dr. de Magalhães firstly holds that leprosy is not due to the bacillus lepræ on the ground that even, he says, in tuberculous cases it frequently cannot be found, and when found can neither be cultivated nor reproduce the disease by inoculation. He does not believe it to be contagious because in Brazil, where lepers mix freely with other people, the disease does not spread. Some Brazilian writers disagree with him here, but these persons he regards as unpatriotic. "See," he says sadly of one of them, "how a Brazilian furnishes arms against his own country." Finally, he thinks the disease is hereditary in a wide sense of the word—i.e., that leprosy may be transmitted directly or may alternate with neuroses such as epilepsy. Without any hereditary transmission at all, he further says, it may be produced by improper diet, long exposure to damp, "emotions sad or keen, trauma, &c." In face of this list with the comprehensive "&c." at the end of it, that we are not all lepers is owing obviously only to the miraculous intervention of Providence.

Leprosy, we are told, flourishes in Brazil mainly in marshy districts, where it supports Mr. Hutchinson's theory by attacking principally the fish-eating part of the population. Thus it is very prevalent in Para and in parts of Maranhao. Even to allow whale's flesh to form a large part of a person's food would seem to be enough to produce leprosy, as is shown by the disastrous effects of such a diet on the Itacaripa islanders. To avoid getting leprosy in Brazil, then, it would be as well to abstain even from the appearance of fish. As regards treatment, the essential thing is to improve the dietetic and hygienic conditions of the people; isolation the author regards as brutal and unnecessary.

The greater part of the book is taken up with the opinions of various authorities on the points at issue. The account of the author's own work occupies but a few pages, and nearly as much space is devoted to a spirited denunciation of bacteriologists in general and Hansen in particular. So vigorously does he inveigh against them that in one place he has to check himself with the reminder that the "study of leprosy requires calmness, prudence, and meditation."

A vigorous opposition is as useful in science as in politics, but in the former its duty is not merely to oppose but to oppose in an unbiased spirit. While we admire Dr. de Magalhães as a man who is not afraid of being in a small minority, it cannot be denied that the partisan spirit in which he writes detracts seriously from the value of his work.

SWANSEA WORKHOUSE INFIRMARY.—At the meeting of the Swansea Board of Guardians held on Sept. 10th it was decided to appoint a resident medical officer to the Workhouse Infirmary. Mr. D. H. Thomas, the visiting surgeon, having resigned the appointment, will be granted a superannuation allowance.

Analytical Records

FROM

THE LANCET LABORATORY.

(1) SOLOID STAIN METHYL VIOLET; (2) TABLOID BISMUTH RHUBARB, AND SODA; AND (3) ENULE PREDIGESTED MEAT AND MILK SUPPOSITORIES.

(BURROUGHS WELLCOME AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

WE have already pointed out the convenience of "soloid" microscopic stains. They afford a ready means of preparing a staining solution for microscopic work in a short time and possess the advantage that they need not be used until required, and of course the dye in the solid state, as in the "soloid," is permanent, while the liquid stains are liable to changes. A recent important addition to the list is the methyl violet soloids containing 0·1 gramme of the dye. Standard solutions can therefore easily be prepared with the "soloid" methyl violet. As is well known, methyl violet is a useful and quick stain for various micro-organisms and notably for the diphtheria bacillus. The following formula of ingredients now embodied in a tabloid is of well-known value in certain forms of gastric disorder: bismuth subnitrate, three grains; powdered rhubarb, one grain; and bicarbonate of soda, two grains. The tabloid on moistening readily disintegrates, so that for the purpose of administration the drugs contained in it may be regarded as being taken in the form of powder. We have also received specimens of rectal suppositories containing predigested meat and predigested milk respectively which are of a size suitable for administration to children. They are of a shape which renders the expulsion of the suppository after its greatest diameter has been passed impossible. This particular brand is distinguished by the word "enule."

SHREDDED WHEAT BISCUIT.

(THE CEREAL MACHINE CO., 57 TO 63, JACKSON-STREET, WORCESTER, MASS., U.S.A., AND 6 AND 8, EASTCHEAP, LONDON, E.C.)

It is surely enough to know that this preparation is wheat, whole wheat, and nothing but wheat, to be able authoritatively to speak of it in terms of praise. There is a strong tendency nowadays to submit natural foods to some process of preparation, a course which too often leads to the loss of a very serious proportion of the valuable food constituent of the original product. According to our analysis this is not so with the shredded wheat biscuit, besides which all that is done in its preparation is to make the whole wheat berry elastic by steam after it is thoroughly cleansed, and then to tease it out, so to speak, into a homogeneous mass of shreds. In appearance the shredded wheat biscuit may be said to resemble a miniature wicker-basket. It is a very palatable and crisp biscuit containing the entire constituents of wheat, which, of course, include the germ. Our analysis gave the following results: moisture, 10·35 per cent.; proteids, 12·84 per cent.; mineral matter, 1·50 per cent.; fat, 0·80 per cent.; soluble carbohydrates, 38·40 per cent.; and insoluble carbohydrates with fibre, 36·11 per cent. We have not examined a preparation of wheat in which the total amount of soluble matters is so high as is shown in the foregoing analysis of shredded wheat biscuit. And this large proportion of soluble carbohydrates is due chiefly to dextrinised starch. The clear water extract of the biscuit gives a heavy brown red colouration with iodine instead of blue, as would be the case with soluble starch. It is evident, therefore, that the process of preparation not only moulds the biscuit into a pleasing texture and form, but renders it a very digestible article of diet as well. A comparison of the foregoing analysis with the analysis

of entire wheat shows that the proportion of constituents is the same, but more than a third of these constituents by weight is converted into a more digestible state. The biscuit may be used with distinct advantage as a substitute for bread and a great many attractive dishes can be prepared with it. Though it contains the entire wheat it is free from irritating husk. Dietetically it is superior to the average white bread. Owing to the fact that the carbohydrates of the original wheat are largely broken down in the method of manufacture it is very suitable for invalids. The biscuit keeps well, apparently neither absorbing moisture nor losing it. In view of these results we regard the shredded wheat biscuit as a very important addition to our daily foods. It represents an unimpoverished natural product and on this account claims our commendation.

CAFOLIN LIQUID COFFEE.

(THE CAFOLIN CO., 20, EASTCHEAP, E.C.)

We believe this to be a genuine coffee extract concentrated by approved methods. According to our analysis it contains just over 1 per cent. of caffeine. A good infusion of coffee (one of coffee to ten parts of water), according to our analytical experience, contains on an average 0·11 per cent. of caffeine, so that this "liquid" diluted ten times would yield a beverage of the same strength as good coffee infusion as regards the amount of alkaloid. The diluted liquid coffee does not, however, contain any important quantity of the other principles of freshly roasted coffee which are represented chiefly in oils and certain aromatic substances. The liquid has a tendency to deposit its caffeine associated with tannin. The liquid yields a palatable beverage of pleasant coffee flavour possessing the stimulating properties referable to caffeine in the same degree as a well-made infusion of coffee, judging from the proportion of alkaloid present.

(1) GLOBENARIS WATER; AND (2) MEAT PREPARATIONS.

(COOPER AND CO., 80, GLOUCESTER-ROAD, SOUTH KENSINGTON, LONDON, S.W.)

It is curious how the presence of an excess of oxygen in ordinary carbonated water modifies its taste. The sharpness of ordinary aerated water seems to yield in favour of a smoother or "rounder" flavour. Of course, oxygen is not dissolved by water with the same facility as is carbonic acid gas. Nevertheless, we found in "globenaris" water just over 5·26 per cent. of oxygen in the escaping gases. The water proved to be of praiseworthy purity, barely a trace of residue being obtained on its evaporation, nor was there any evidence of metallic contamination on testing carefully with the well-known delicate reagents. It is exceedingly difficult to prepare distilled water without some form of contamination, however slight, creeping in, and when it contains carbonic acid and oxygen under pressure the difficulty is enormously increased. We have found that oxycarbonated water attacks metals such as copper and zinc much in the same way as do the mineral acids. By first oxydising the metal an oxide is formed which soon gives place to a soluble supercarbonate. Messrs. Cooper and Co. have taken immense pains to produce aerated waters of remarkable purity and have established special machinery for this purpose which we have had the opportunity of inspecting. Such attempts deserve success and we are glad to be able to record that this success has been obtained judging from the satisfactory results of our analyses of the products. It need hardly be added that after taking these special precautions with the machinery every endeavour is made to provide against the contamination of the water in syphons. In these vessels pure fittings are used, the outlet tube of the syphon being porcelain-lined. In addition to pure plain aerated water charged both with oxygen and carbonic acid Messrs. Cooper and Co. also prepare medicated oxycarbonated waters containing, for example, lycetol, lysidine, phenocoll, and piperazine. Oxycarbonated water affords a very agreeable way of administering these drugs which are known to be of value chiefly in conditions in which excess of uric acid is a feature. Amongst other preparations submitted to us by this firm was a specimen of meat juice which on analysis gave the following results: moisture, 61·00 per cent.; mineral matter, 6·91 per cent.; and organic matter, 32·09 per cent. The total nitrogen was 3·72 per cent. which proved to be distributed as follows: nitrogen in insoluble albumin, 0·284; in acetic acid coagulum, 0·180; in peptone and albumose, 2·092; and in meat bases, 1·164. The juice is therefore a true nutritive as well as stimulant. We examined also a beef essence and a chicken essence, both of which are jellies containing, as our examination showed, a desirable proportion of the nutrient matters of beef and chicken respectively. Moreover, both jellies possessed a delicate and palatable flavour.

(1) KALSBECK TABLE WATER; AND (2) KALSBECK TABLE WATER CUM LITHIA.

(REID AND DONALD, PERTH.)

Both aerated waters proved to be free from the common impurities of waters of their class. They were bright and sparkling and yielded a clean mineral residue on evaporation. The table water contained 16 grains of mineral salts per 12-ounce bottle, consisting chiefly of the carbonates of lime and the alkaline carbonates. The lithia water yielded on evaporation just over 23 grains of mineral salts; this increase may broadly be taken as due to the carbonate of lithium present. The water gave a well-marked reaction for lithium when examined by means of the spectroscope. The waters were free from organic matters. In accordance with these results we regard them as approaching a satisfactory standard of purity, while the lithia water has an added value on account of the lithia present which may in this way be administered very agreeably.

FLORAL HAIR DOUCHE.

(SOUTHALL BROTHERS AND BARCLAY, LOWER PRIORY, BIRMINGHAM.)

This is a very pleasant spirituous preparation containing certain ingredients which are admittedly beneficial when applied in this form to the hair. It is practically a dry preparation—that is, contains no water—so that its application produces no stickiness and leaves the hair clean and dry and with a generally agreeable sensation on the scalp. From a consideration of the formula it would seem that this douche is a good tonic application for the hair. It is distinctly antiseptic and contains no irritating or injurious substances. On account of its wholesome influence on the scalp it minimises the tendency to dandruff.

SOLEX IPECACUANHÆ.

(FLETCHER, FLETCHER, AND CO., HOLLOWAY, LONDON, N.)

Solex ipecacuanhæ is practically a standard ipecacuanha preparation by means of which ipecacuanhæ wine may readily be prepared. The preparation is neutral and miscible, containing 0·8 gramme of total alkaloid in 100 cubic centimetres, and the inert extractive matters are as far as possible eliminated. The preparation mixed with seven volumes of sherry forms the vinum ipecacuanhæ B.P., 1898. The result is after some time a slightly turbid liquid, which may be rendered, however, quite bright by filtration without affecting its active therapeutic strength. We are glad to record this important improvement, inasmuch as the ordinary liquid extract of ipecacuanhæ is one of the most unsatisfactory preparations of the pharmacopœia. Solex ipecacuanhæ, on the contrary, is a standard preparation yielding an ipecacuanha wine of definite strength and therapeutical efficiency on diluting it with sherry in the proportions indicated.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 22, 1900.

A GOOD USE OF WEALTH.

IT would be a libel on the wealthy men of Great Britain, who are yearly becoming wealthier in spite of wars and Chancellors of the Exchequer, to regard them as indifferent to the best voluntary use of their superfluous means and especially to the enormous amount of good that may be done by the endowment of medical science and research. The voluntary hospitals of this country are sustained in their blessed and benevolent work by a deeper personal sympathy with the sick poor than exists in most countries where such institutions are maintained by enforced rates or taxes. If we could convince the generous wealthy that the cause of medical science is the cause of the poor and that the cultivation of this science would help the work of hospitals as well as minister to the prevention and cure of disease among all classes, we should procure such bequests and legacies, not to say gifts during life, from benevolent men as would make Britain what Britain ought to be as the country of JENNER and of LISTER—the leader in those investigations which go to the very root and source of disease with a view to its extinction and suppression as well as its cure. There are indications that if such countries as ours are to preserve their power and their rule in the world they must not rely so much as heretofore on the tendency to multiplication in the race which so far has well supplied our wants. We must husband the lives that we have in all stages of their existence and oppose with all the resources of reason and of law whatever can be demonstrated to be the cause of disease and premature sickness and death. It is only this demonstration that needs to be forthcoming to induce generous citizens to make endowments that might alter the whole outlook of many individual lives and of particular races. It is only the nature of the problems to be investigated that hinders. This is so abstruse and complicated and so much out of the track of common observation that it seems incomprehensible and uninteresting to the lay mind. Mr. ANDREW CARNEGIE, whose colossal wealth, if well used in this way, might without any noticeable impoverishment of himself be equal to the elimination of two or three of the great causes of death that are the despair of our large city communities, draws a distinction, especially with reference to our own country, in this respect between the lay mind and the professional mind. He speaks of the splendid legacy of Sir ERASMUS WILSON to the Royal College of Surgeons of England and looks in vain for any similar liberality in the aristocratic classes of Great Britain. This comparison, or contrast, is only part of a larger contrast which Mr. CARNEGIE in his "Triumphant Democracy" draws between the alleged selfishness of the aristocratic classes and the liberality of the Republic of which he is so justly proud. He is more right when he suggests that the contrast is due to personal differences in the intelligent apprehension of the questions and problems to be studied rather than to the nature of the Government under which we live. He is naturally proud of the splendid educational institutions of the United States bestowed by individuals on the Republic—the Johns Hopkins University, the Cornell University, the Vanderbilt University, the Packer Institute, the Vassar College, the Wellesley College, the Smith College, the Bryn Mawr College, and the Stevens Institute, the Johns Hopkins University alone having cost £1,000,000. Mr. CARNEGIE himself has given $50,000 to build a laboratory in Belle Vue College. As we have said, the researches and investigations needed refer to problems of great complexity and are naturally understood better by the medical man than by the rich layman, whether aristocratic or democratic. Our belief is that we have only to make the nature and claims of these problems a little more clear to our wealthy compatriots to get from them as generous gifts as those which have founded and now maintain our voluntary hospitals. It was THOMAS GUY, himself a rich man, who built and endowed a hospital which for over 100 years ministered to 400 of the poor of south London, and the generosity of his successors has enabled the hospital to do a still larger service to the poor.

There is every reason to wish that wealth should be devoted to medical science for its benevolence to man and beast, for both have promise of untold benefits from its researches. We have an object lesson at the present moment in Great Britain. In Glasgow a few cases of plague have appeared. Where is the panic that such an event would have occasioned a hundred or even fifty years ago? It does not exist. Why? Because medical science has defined the danger and the way to deal with it. In several quarters, even in this aristocratic country, many signs are appearing of the intelligent application of wealth in a benevolent way to medical science. Witness the munificent gift of Lord IVEAGH to the Jenner Institute of Preventive Medicine. Only last week we noticed the gift to Guy's Hospital of £5000, the interest of which is to be used "to increase and spread the knowledge of the means of preventing and treating disease." The gift is from "A Friend of the Hospital" and tends to indicate that the same sympathy which provides hospitals will soon endow research and that such an intelligent use of wealth will be most natural in a country which has endowed colleges, universities, and hospitals for centuries back. The more Mr. CARNEGIE revolves this subject in his mind the more difficult will he find it to know for which mercy to be most thankful—that he was born a Scot or that he was nurtured an American.

THE paper issued by the War Office last week containing the proceedings of the court of inquiry into the treatment of the British prisoners of war at Pretoria, with a covering despatch from Lord ROBERTS to the Secretary of State for War, is by no means pleasant reading. It discloses a very discreditable state of things on the part of the late Transvaal Government. It also contains a very emphatic expression of opinion on the part of the Field Marshal in regard to a member of the medical profession. After speaking in deservedly

appreciative terms of the efforts made by Dr. P. H. HAYLETT and Dr. R. VON GERNET to ameliorate the condition of their patients in the hospitals at Racecourse and Waterval and of the timely aid and effective coöperation rendered by some gentlemen resident in the neighbourhood, Lord ROBERTS goes on to say: "On the other hand, it would be difficult to condemn too strongly the conduct of Dr. H. P. VEALE, M.B. Cambridge, whose heartlessness in ignoring the disgraceful treatment of the sick prisoners and the remonstrances addressed to him by the medical officers in immediate charge of them calls for the severest reprobation." We have thought it right to quote the exact words used by the Field Marshal because they serve to indicate the feeling of indignation which a perusal of the whole of the documentary evidence evidently aroused in the mind of Lord ROBERTS, who is universally recognised as a just and humane man.

It is necessary, however, to remark that the War Office document is incomplete in that many of the letters referred to in the text are not published, and it is only fair to Dr. VEALE to state that in his examination before the court of inquiry he said that he was one of the three medical members of the Transvaal branch of the Geneva Red Cross Society; that he had nothing to do with the sanitary arrangements of the prisoners of war at the Racecourse, although he allowed that it would be his duty as medical officer attending the sick to represent and try to remedy anything which he found prejudicial to health, and this he did; that he disclaimed all responsibility for the medical and sanitary arrangements for the prisoners of war at Waterval; and that he denied having received most of the letters alleged to have been addressed to him by Dr. HAYLETT representing the grievous condition of the hospitals and their occupants. We propose to defer any comment of our own on Dr. VEALE'S conduct until sufficient time has been given to permit of his making public what he has to say in justification or explanation of his action.

Whilst we are upon this unpleasant subject we may add that we are glad to believe that there are not many clergymen in the Church of England like the Rev. J. GODFREY who under colour of consideration of his duty to the Transvaal Government and in order to gratify his "desire to maintain the honour due to his position" discontinued the regular ministrations of the services of the Church because a prisoner, and he a non-combatant, had escaped. We commend to the notice of the Rev. J. GODFREY a study of the life of Father THOMAS of Algarve who refused his ransom in order to minister to the Portuguese prisoners of the Moors in the dungeons of Al Araish.

As regards the general question of the treatment of the British prisoners of war—the bad quality and insufficient quantity of the rations, the neglect of all sanitation, the treatment of the colonial corps prisoners, and so forth—we need not dwell upon a subject which has been already so fully discussed in the daily journals. Happily that is all over and a thing of the past now.

THE *New York Medical Record* of August 11th contains a full abstract of an address on American Medicine, delivered at the International Medical Congress in Paris by Dr. JACOBI of New York, which gives a very interesting account of the development of the profession and of medical science and literature in the United States. There are parts of the address with regard to which opinions may differ. We observe that our contemporary in its issue of August 25th takes exception to Dr. JACOBI'S criticisms on American medical journalism, and it must be admitted that Dr. JACOBI is very candid in the denunciation of hundreds of medical journals which, according to him, represent rather "the growing commercialism" of the century than any ardent desire to advance medical science or medical literature. He declares that there are 300 such journals and that neither medical science nor medical ethics would suffer if the number were reduced to 50. Such a great number of journals and the competition implied thereby Dr. JACOBI thinks to be inconsistent with the independence of the editors and with high aims on the part of the proprietors. Our contemporary resents such aspersions with some warmth, and if we thought that Dr. JACOBI meant his criticism to be applied indiscriminately to American journalism we should regard the resentment as reasonable. But we must take his arithmetical and other facts into consideration. His figures are certainly startling apart from his positive statement, which most of us in Europe can confirm, that many journals seem to exist to puff proprietary articles. Perhaps he is wrong in regarding them as in any proper sense medical journals. Certainly no such number of real and honest journals could be supported even by the large numbers of the American profession. For the class of papers which he condemns no censure is too severe and it seems to us that all honest medical journals should feel grateful to an independent critic for plain speaking on the subject. The one necessary thing for the respectability of journalism, professional or otherwise, is independence. It would be unreasonable to expect proprietors to be above all considerations of profit, but it will be a bad day for scientific journalism if an independent medical critic cannot say what he thinks of the fitness of the journals of the profession to advance its science and its dignity.

Dr. JACOBI is almost equally severe on the number of medical societies in America. In Colonial times there were two; in 1876 nearly every State in the Union had its medical society, and most counties in each State have their own medical society. All the state societies are represented in the American Medical Association, save one. The exception is a great one—that of the State of New York. This State is excluded, and it is instructive to notice that the reason for its exclusion is an ethical one. There is no central authority in the United States vested with any legal disciplinary power over members of the profession as is the case to a certain extent with the medical authorities and the General Medical Council in the United Kingdom. The disciplinary power in the United States lies in the societies, and chiefly in the American Medical Association in which all the State societies are represented. The State societies exercise their disciplinary power by refusing membership to medical men who take out patents for medicines, or who advertise themselves or allow themselves to be advertised by others; and the American Medical Association has its code of ethics based, we are proud to say, on the classical work of PERCIVAL, our own great

medical moralist. It expects all associated State societies to fall into line with the requirements of this code and, failing to do so, it excludes them from representation or expels them as in a significant case in 1882. The question of holding relations with homœopaths arose in that year. There was the same universal feeling against such relations as obtains in this and in all European countries. It obtains, also, in the United States, but in the New York State Society a special point was raised and contended for strongly. This Society admitted the general impossibility and incongruity of consultations between regular practitioners and those committed to the dogmas of HAHNEMANN, but it was argued that in some cases it would be inhuman to refuse a consultation and the Society modified their law to meet exceptional cases and cases of emergency. For this modification, of which Dr. JACOBI speaks approvingly, the State of New York was expelled from representation in the American Medical Association. The American Medical Association has no legal relation to the legislature of the United States as the State societies have. It is nevertheless a powerful body, more powerful in some respects for being voluntary and unrestrained by law, and is capable, as we have seen, of making its views felt by the societies of individual States. The action of the association in this particular question was the more resolute and striking inasmuch as homœopathic and eclectic practitioners in the States are legally recognised as much as regular practitioners, but this is only an additional reason for regular practitioners in voluntary associations emphasising the difference between them and their fanatical competitors.

The peculiar legal position of the profession in the United States is well shown by Dr. JACOBI and must be remembered by all who wish to judge fairly the difficulties in the way of medical practitioners and medical teachers there. Of late years, with an enormous advance in medical education and in medical practice, there has been actual retrogression on the part of the States in respect of medical legislation. In 1840 the legislatures of nearly all the States had laws for protection of the citizens from quacks. Between 1840 and 1850 most of these laws were repealed or not enforced out of deference to unlicensed practitioners. The power to confer degrees rests in the different States on the most various conditions of law. In New York and Pennsylvania the conditions are satisfactory, but in Illinois, where so much has been done by medical teachers to improve education, legislation like that of New York has been defeated. In Ohio and Nebraska the statutes require only the nominal endowment of $5000 for the creation of a degree-conferring institution. In other States and Territories any body of men may form an educational corporation with power to confer degrees. So wide is the difference of standard of medical education and qualification that it is difficult for the different States of the Union to arrange for reciprocity of medical practice between their graduates.

Such are the disadvantages of the medical profession in a new country having democratic institutions based on an exaggerated view of the rights of the individual in regions where he can have no rights not acquired by study and special knowledge. But such disadvantages can only raise our esteem for those who, prevailing over all difficulties, have brought the medical profession to a pitch of efficiency, alike in the region of research and the domain of practice, which compares favourably with the standard of any European country. The number and competition of the schools, of which in 1899 there were 156, with 24,119 students, having a very inadequate check on their degree-conferring powers, only makes us wonder the more that within recent years it has been possible in many States to extend the medical curriculum to three or four years, and to report through societies and journals an amount of good work which implies a very high standard of education in some quarters and a very high pitch of medical and surgical ability diffused throughout the enormous area of the United States. Dr. JACOBI, while severe enough in his criticisms on medical journals and medical societies, leaves us in no doubt that he is proud of his *confrères* and not altogether prepared to condemn that democratic constitution which has created medical libraries and medical laboratories that are the envy of older countries.

Annotations.

"Ne quid nimis."

THE WORK OF THE GOVERNMENT LABORATORY.

THE work of the Government Laboratory grows apace and increases in interest every year. There can be little doubt that the appointment of Dr. Thorpe a few years ago in succession to Dr. (now Sir James) Bell led to a considerable amount of reorganisation of this important department. The annual reports at any rate show that the operations conducted in the Government Laboratory have been reduced to something like a system. As a result of this improvement in the equipment of the department together with the erection of new and modern constructed laboratories in Clement's Inn-passage, the Government has called into greater requisition the services of its laboratory department. The old Somerset House laboratory was primarily instituted for the purpose of controlling Inland Revenue regulations which referred chiefly to beer and spirits. The work now not only relates to Customs and Excise but to the examination of foods, water-supplies, sewage effluents, Government office supplies, and a number of miscellaneous articles with which the various Government departments come into contact. Further than this the principal of the laboratory practically occupies the position of a consultant and adviser to the Government, a *rôle* which cannot be fulfilled without the institution of some amount of original research. Dr. Thorpe was called upon, for example, to inquire into the use of lead compounds in pottery manufacture, and this involved the making of a number of experiments on the composition of "frits" which could be regarded as least likely to produce lead poisoning. The inquiry, as we know, has led to excellent results which have stimulated the pottery industry to abandon the use of raw lead and in some cases to discard the use of lead altogether for glazing purposes. Again, Dr. Thorpe's assistance has been in request in an inquiry into the composition of defective steel rails, and other subjects have been referred to him relating to the defects of boiler-plates, shafting, and cranks in connexion with accidents under investigation by the Board of Trade. The work of the principal of the laboratory has been considerably increased also by the fact that he has been appointed by the Local Government Board, in succession to the late Sir Edward Frankland, to undertake the analyses of the London water-supplies. In our opinion this

department should have been perfectly distinct from the work originally undertaken in the Somerset House Laboratory. It is to be observed, however, that a special room has been fitted up for the purpose of making the analysis of the London water-supplies. Still it is evident from the present report that Dr. Thorpe's hands are quite full and we should have thought that this important department of public work would have been placed in the hands of a person who could devote his whole time to the subject. As we have already pointed out the reports on the water-supply are much belated and are generally issued two months after the taking of the samples. We do not gather whether the additional space granted for the analysis of the London water-supplies includes a bacteriological laboratory. Since filters and disinfectants are also examined in the Government laboratory we presume that bacteriological tests are conducted there, though in the instances given in the present report we do not find any details as to how the antiseptic value of rejected and accepted disinfectants was arrived at or as to exactly why a certain filter was found to be satisfactory and others unsatisfactory. We are glad to see that the relations between the public analysts and the Government Laboratory authorities continue to improve. In the majority of cases the findings of the public analyst as to adulteration of milk and butter and other things have been upheld. We note, also, with satisfaction that Dr. Thorpe has conferred with representatives of the Society of Public Analysts as to the analytical data to be regarded as criteria in deciding whether or not butter contains foreign fats. The laboratory officials have also been busy in examining samples of imported beer for the presence of preservatives for the information of the departmental committee now inquiring into that subject in its relation to the purity of food. Beer continues to be diluted, but the practice is almost entirely confined to London. Of 95 samples of tobacco taken from manufacturers and dealers 20 were found to be adulterated with liquorice or glycerine. A curious case of spontaneous ignition was investigated in which it was shown that zinc dust sent through the post in a paper wrapper had been the cause of the phenomenon. The report teems with interesting facts in connexion with most kinds of fraud and adulteration as well as also with many important points relative to home industries and those which involve risk to those engaged therein. Instead of the mere digests of these facts in an official document of only 17 pages we should like to suggest that the whole of the results obtained in the Government Laboratory during the official year should in the future be embodied in a blue-book much in principle and in scope like that issued annually by the medical officer of health of the Local Government Board.

THE SOUTH AFRICAN COMMISSION.

WE must, of course, await the publication of the report of the South African Commission at the end of its inquiry before expressing any definite opinion in regard to the subjects under investigation. There does not seem to be any valid reason, however, against our calling attention, in the meantime, to the very important evidence given by Lord Roberts which has been supplemented by that of his private secretary, Lord Stanley, and followed by the testimony of Lord Kitchener. As chief of the staff Lord Kitchener was probably better acquainted with the difficulties and details of the transport service than any other officer at the seat of war. It is naturally very satisfactory to us to find from the brief reports which have appeared of their evidence that we were amply justified in the position which we took up from the first and to which we have throughout adhered. That is, however, a very secondary and insignificant matter as compared with the general sense of relief which promptly followed the perusal of Lord Roberts's evidence. It was not so much with the truth or otherwise of Mr. Burdett-Coutts's allegations that most people concerned themselves as it was with the suggestion that all the suffering and hardship which he so vividly described were attributable to want of foresight, negligence, and bad management. It was this that made his allegations so distressing to people in this country. The assurance of Lord Roberts that owing to the difficulties of transport in connexion with his advance and the nature of the country they were unavoidable has naturally given rise to an immense sense of relief. We know now that, in the opinion of Lord Roberts, the campaign had been an extraordinarily difficult one from the hospital point of view and that the Royal Army Medical Corps, assisted by the civilian surgeons, as he emphatically stated, had met the difficulties magnificently. We need not discuss the facts detailed by Lord Roberts in his evidence in connexion with the insufficiency of the railway and other methods of transport at his disposal, but we may make a remark in passing that we are glad to have from the first pressed for the appointment on the Commission of some one or more managers of our big railway lines, to whom the facts and figures addressed by Lord Roberts cannot fail to prove of great value when the time comes for drawing up the report. We may add that Lord Kitchener's evidence agreed with that given by Lord Roberts. He said that the difficulties of transport were very great and constituted a serious problem throughout. It had been largely requisite to subordinate everything to the necessity of a rapid advance. The hospital appliances carried on Lord Roberts's advance amounted to 1680 tons and it was impossible to take more equipment or *personnel*. Lord Kitchener acknowledged that doubtless a good deal of suffering was undergone, but this was not due to neglect by the medical officers or to the equipment of the field hospitals. The experience gained in South Africa will not, we trust, prove barren of good results but lead to all needful improvements in our military and hospital systems in the field. Altogether apart from the report of the Commission there will remain subjects for serious consideration. As Lord Roberts suggested, it will no doubt be very advisable when the war is over that there shall be a departmental inquiry into the questions which have been raised in connexion with the Royal Army Medical Corps in time of war.

INDUSTRIAL TRAINING OF GIRLS UNDER THE POOR-LAW.

A REPORT has been prepared by Miss Stansfeld, assistant inspector to the Local Government Board, on the Industrial Training of Girls in the Metropolitan District Schools, presenting the objects it is desired to attain and the methods of training adopted in the various schools. As is so frequently the case with educational reports, the teaching provided is described with but few indications of the mental and physical characteristics of the children and their special needs; thus material is lacking for the formation of a sound opinion as to what their training for industrial occupation should be. We dwell upon this point because much confusion exists between educational training planned to evolve the mental powers and character of the child and technical teaching in preparation for the work of adult life and self-support. Technical instruction is a poor substitute for educational labour spent in building up and evolving mental ability during early years. The report says: "The effects of neglect and heredity on mind and body are often only too apparent, and, even with the more active and intelligent children, it requires, in some cases, two or three years' existence in the brighter and healthier atmosphere of the school, before the influence of

previous surroundings can be finally thrown off; nor is this all, the pick of the Poor-law children are, as a rule, boarded out, and the failures of that system are returned to the workhouses and find their way to the schools. The presence of 'ins and outs' and the admission of children of 11 years old and upwards in a state of almost complete ignorance, seriously affect the administration of the schools." It is to a careful study of the scientific principles of training, founded on observation of the special children to be educated, that we look for advancement in results; also for some definite plan of action in place of vacillation and oscillation of opinion between methods of school training and technical instruction for the purpose of fitting the children for positions in industrial life at an early age. Miss Stansfeld says that the kindergarten should be universally adopted; signs of greater alertness and intelligence among the infants may be observed in those schools where the kindergarten system is in vogue. We may venture to ask is there any universal system that it is wise to adopt, or, indeed, any one method including all the necessities for the training of children? The kindergarten system is very good, but is often employed with too little adaptation to individual children in evolving their brain power and removing brain faults, unless conducted by teachers well trained to observe the points that demand special attention. Contrary to the opinion of many representative guardians Miss Stansfeld advocates the grouping of girls after 14 years of age in associated or block-system schools so that a period of definite training for domestic service may be commenced, adding that in many instances the "mother of a cottage home" is wanting in natural qualifications and the experience necessary for imparting good domestic habits. These considerations naturally point to the great want of a model home or training college where probationers may be received for one or two years before appointment to the responsible care of children, and where they may learn some of the practical points of child management as well as laundry, cooking, and other domestic duties. It is in accord with experience that children need general education up to 12 or 13 years of age, and that technical or domestic training is better acquired after such preparation, while all persons engaged in the care of children themselves need training for such duties.

THE FEVERS OF INDIA AND THEIR DIAGNOSIS BY MEANS OF EXAMINATION OF THE BLOOD.

THE medical practitioner in India early discovers that typical agues and remittents are not the commonest fevers which he is called upon to treat—they are, in fact, in most parts of India of comparatively rare occurrence—but he meets with innumerable cases of fever of a more or less irregular, continued type, generally with a morning remission of about one degree and a duration of anything from one day to six or eight months. With these fevers there is but little constitutional disturbance, and quinine, and in fact all drugs, are of but little if any benefit. Some recent writers have attempted to differentiate certain classes among these fevers on a basis chiefly of their duration, but it is easy to show a series with every gradation between the limits named and the introduction of new names without sufficient distinction only makes confusion more confounded. Among Europeans that scourge of hot countries, enteric fever, is probably now in most typical cases well recognised, but it may well be that some of these anomalous fevers are clinically mild cases of enteric fever and as virulent as the worst for spreading the infection. More knowledge on this point would be of the greatest value in tracing the means of spread of this disease which has up to the present admittedly baffled all attempts to elucidate it. Further, now that we have some clue to the method of transference from case to case of the malarial parasite by the agency of certain mosquitoes, the further elucidation of this imperatively demands a more accurate knowledge of what fevers are and what are not caused by this parasite. Again, some of these fevers may well be due to the cause, whether physical or microbic, of heatstroke, while some bear a very close resemblance clinically to Mediterranean fever. Now, by the microscopic examination of the blood, we have at our disposal a means of deciding with considerable certainty whether a certain fever is due to one of these three causes and it appears to be only from want of opportunity that more use is not made of the vast amount of clinical material available in India. When we consider that among the British troops alone nearly half the deaths and invaliding and nearly a third of the total sickness are due to these causes the importance of the subject can hardly be overrated. Most of the medical practitioners in India are Government servants and can hardly be expected to carry out this work entirely in their own time and at their own expense, and we would urge upon the authorities their duty to provide the necessary apparatus and opportunity to allow of an examination of the blood being made at least in all large hospitals. There are already many medical officers fully capable of carrying out this work and opportunity would speedily produce more.

POLLUTION OF SEA-WATER BY SEWAGE.

AT the British Association in Bradford, Dr. E. A. Letts, Professor of Chemistry, Queen's College, Belfast, and Mr. John Hawthorne, B.A., of Queen's College, Belfast, communicated a paper on Sept. 8th, in the Chemical Section, on the Seaweed Ulva Latissima and its Relation to the Pollution of Sea-water by Sewage. For a number of years past a very serious nuisance has arisen from the sloblands of the upper reaches of Belfast Lough during the summer months, the stench at low tide being quite overpowering, and the air heavily charged with sulphuretted hydrogen. In the northern portions of Dublin Bay a precisely similar nuisance, though not of the same magnitude, also arises from the sloblands. The nuisance is caused by deposits of the green seaweed called "ulva latissima" or "sea-lettuce" ("sleech" locally), which in the two localities mentioned grows in abundance and during high winds or gales is washed ashore. In Belfast Lough the quantity thus deposited is enormous, forming banks which are often several feet thick, and which extend for miles along the coast. Once deposited these layers of seaweed often remain more or less stationary for months in the shallow bays or pools of the neighbourhood, and in warm weather rapid putrefaction occurs and a perfectly intolerable stench arises which is perceptible over a wide area and seriously affects not only the comfort of the inhabitants of the district but also the value of their property. An extended laboratory investigation has shown that when the seaweed ferments hydrogen and carbonic anhydride are first evolved in about equal volumes and fatty acids are produced. Propionic acid is the chief of these fatty acids; butyric acid is also formed and probably acetic acid in addition. In a later stage of the fermentation sulphides are also formed, probably by reduction of sulphates present in sea-water, and the seaweed blackens from formation of ferrous sulphide, and this latter disengages sulphuretted hydrogen by the action of the fatty acids, whence the nuisance. The evidence at present collected as to the organisms concerned in the putrefactive process points to there being two chief species—(1) a spore-forming bacillus which apparently infects the seaweed and causes the production of fatty acids from its tissues; and (2) a micro-organism probably derived

from the mud of the shore which gives rise to the formation of sulphides by a later fermentative process. The evidence tending to prove that the occurrence of the seaweed in quantity in any locality is associated with sewage pollution is of three kinds:—1. The composition of its tissues, the amount of nitrogen it contains being far in excess of any other seaweed of which analyses are recorded. It contains over 6 per cent. of nitrogen. 2. Assimilation experiments. A frond of the seaweed was placed in various mixtures in succession—(*a*) of polluted sea-water; (*b*) polluted sea-water, plus sewage; (*c*) polluted sea-water with sewage and ammonium salt; and (*d*) sea-water, plus nitrates. By determination of free and albuminoid ammonia and nitrates in these mixtures before and after the seaweed had been in contact with them the power of assimilating nitrogen which the weed possesses was found to be remarkably high. During these experiments the weed remained in perfect health and is still growing nine months since the commencement of the experiments. 3. The localities where ulva latissima abounds and from which it is virtually absent. It is in abundance in Belfast Lough, but is entirely absent from the neighbouring Strangford Lough, which is similiar in area and in many other respects to Belfast Lough, but differs from it in not being extensively polluted by sewage. In Dublin Bay the seaweed is found in abundance in the harbour, which is highly polluted, but not in the southern parts of the bay, which receive no sewage except near Kingstown, where a large sewage tank discharges at the ebb tide. There the weed occurs. The evidence which Dr. Letts and Mr. Hawthorne have collected tends to the conclusion that the occurrence of ulva latissima in quantity in a given locality is an indication of sewage contamination and there can be no doubt as to the power which the weed possesses of absorbing nitrogen compounds from polluted sea-water. While thus acting as scavenger it may itself give rise to a very extensive nuisance. These experiments are of great interest because they localise and explain the cause of the horrible odour existing on the shores of Belfast Lough. When the Belfast corporation got their last Bill passed they were obliged to introduce a clause binding them to purify their sewage, which empties into the lough, so as to remove the smell from its shores. They propose to do so by bacterial beds, but as they have made no experiments as to the effect of the effluents from these beds on this "ulva latissima" the smell may still exist as badly as ever. They should first see the effect of growing this seaweed in the effluent.

RECOVERY FROM LEPROSY.

IN the June number of the *Polyclinic* Mr. Hutchinson relates a number of cases showing that recovery from leprosy is possible. He expressly guards himself against captious criticism by explaining that by recovery he means termination of the disease process, not removal of its effects. In one case shown by him at the Polyclinic the patient was a soldier who had served in India. The patient had had anæsthetic leprosy of the forearms and legs. The hands and feet were dusky from passive congestion and discoloured by the brown patches of leprosic erythema. A remarkable but not unprecedented fact was that he did not notice any patches until eight years after returning to England. The treatment, which was carried on for 10 years, consisted in the administration of small doses of arsenic, a liberal diet, and abstinence from fish. After 18 months the patches had disappeared. From that time there was slow restoration with absolute abeyance of symptoms. His hands became less dusky and numb. Now the patient can use his hands well and they show no conspicuous changes. They look flabby and the smaller muscles are somewhat wasted. There is permanent anæsthesia of the hands so that the patient often burns himself unconsciously. The feet are similarly affected in less degree. All evidences of active leprosy have now been absent for six years. In a second case a man was blind from leprosy and his hands were somewhat helpless from anæsthesia and muscular wasting. But he was florid and healthy looking and his skin showed no trace of tubercle or patch. For the last 10 years he had been free from aggressive symptoms. In former years leprosy was regarded as incurable, but of late cases of recovery have been observed. According to Mr. Hutchinson they have chiefly been observed in countries where leprosy is not endemic and in patients who migrated from the place where they acquired the disease and were therefore placed under different dietetic conditions. In 1879 Mr. Hutchinson published in the Transactions of the Royal Medical and Chirurgical Society the case of a woman who had returned from Barbadoes the subject of tuberculous leprosy. He never saw the leonine physiognomy more marked. After residing in England for some years she lost all traces of leprosy and with the exception that her hands were numb and crippled she remained quite well. She was enjoined to abstain from fish. Since then Mr. Hutchinson has seen many cases of lepers in whom all symptoms have ceased on returning to England. In America it has been noticed that a number of Norwegian lepers entirely lose their symptoms. In leper establishments in which fish has been an important article of diet little or nothing has been heard until lately of recoveries. Mr. Hutchinson considers that these facts support his contention that leprosy is due to the eating of raw fish—salted, dried, or decomposing.

THE GOVERNMENT CINCHONA PLANTATION AND FACTORY IN BENGAL.

THE official reports of Major D. Prain, I.M.S., superintendent of the Royal Botanic Garden, Calcutta, and of Cinchona Cultivation in Bengal, are interesting documents to botanists, horticulturists, and quinologists. The report of the Royal Botanic Garden, Calcutta, is for the year 1899–1900. Although the rainfall of the year was heavier than usual it did no harm to the foliage plants, ferns, and orchids, the show of which, we are told, was particularly fine. Plants of economic importance received a good deal of attention, especially rhea, a practical machine for extracting the fibre of which is said to have been invented. An investigation into the diseases to which sugar-cane is subject in Bengal is being conducted by Lieutenant A. T. Gage, I.M.S., curator of the Herbarium. The inquiry into the identity of living plants yielding Indian products of obscure origin was continued during the year with valuable results. A representative collection of the various mangoes cultivated in northern India and Bengal has been made on behalf of the Trinidad Government. As regards the report on the Government cinchona plantation and factory in Bengal the report is for the year 1898–99, from which we glean the following facts. The nursery beds of the Mungpoo Division were considerably injured by the low temperature which prevailed in January, 1899, and the mortality among the seedling plants was great. The result of the year's operations was that the total number of living plants (exclusive of the nursery stock) was 2,179,245. The crop of the year obtained from the trees uprooted in the Government plantations in Sikkim amounted to 236,098 lb. of dry bark. The bulk of the bark was of the quinine-producing sort, and with the exception of 1003¼ lb. supplied to medical depôts or sold to Government officers and to the public, the whole crop was, as usual, made over to the cinchona factory for manufacture into quinine and febrifuge. Besides the bark obtained from cropping, 131,615 lb. of bark were

purchased from private plantations in Sikkim and Southern India. The out-turn of the factory was 10,335 lb. of sulphate of quinine and 3921 lb. of cinchona febrifuge, against 10,149 lb. and 4075 lb. respectively in 1897–98. The decrease in the issues of sulphate of quinine is due to a diminished demand on the part of the medical depôts in the Bengal and Punjab commands, to the transfer to the Madras factory of the obligation to supply the North-Western Provinces with the drug, and to the falling off in the demand by Government officers and medical missions for distribution to the poor. The decrease of 404½ lb. in the issues of cinchona febrifuge is attributed to the fact that Government officers took smaller supplies than in the previous year. The stock of sulphate of quinine in hand at the close of the year was greater by 1569 lb. than it was at the close of the year 1897–98. The superintendent, Major D. Prain, I.M.S., and also Mr. R. Prantling, the deputy superintendent of the Cinchona Plantations, received the thanks of the Government of Bengal for their efficient management of the plantation and factory.

THE CONCILIATION BOARD AND THE BRITISH MEDICAL ASSOCIATION.

IT seems as if the honours in respect of a Conciliation Board were to be equally divided between the General Medical Council and the Council of the British Medical Association. The General Medical Council has the honour of having done much to bring the Conciliation Board within the lines of medical politics. The Council of the British Medical Association has the honour of having with a stroke of the pen and at the fag end of an exhausting meeting dismissed the principle. One of the small general meetings of the Association could not have acted with more apparent irreverence towards a principle in which many sensible people see the solution of perplexing problems in general as well as medical politics. Perhaps there is some misunderstanding on the subject. The Council of the British Medical Association has still, we believe, a committee of experts on the subject. We shall patiently await their report before judging the action of the Council.

EXPERIMENTAL STUDY OF CHILDREN.

THE annual reports of the United States Bureau of Education always contain some valuable scientific papers, either produced in America or compiled from materials collected in other countries, together with a general account of educational progress. We have before us a reprint from the report for 1897–98 in which Dr. MacDonald explains the methods he employs in the study of mental averages and inequalities. Different means of studying mental potentialities have been employed by observers. The clinical method consists in observing children by inspection of the development of each feature—the head, the height, and weight, &c., while brain activity and power are estimated by motor expression, response, and coördination; this method has led to practical results. The anthropometrical method and the use of instruments of precision for measurement and time reaction as employed by Mr. Francis Galton and many other observers have given us much accurate knowledge of facts concerning growth, but the results of summarisation do not appear to afford the desired information concerning mental ability and potentiality. A third method of study is by purely psychological inquiry, such as answers to written or oral questions and the recollection of adults of their experiences in childhood; such methods have been used in America by Dr. Stanley Hall, Professor Earl Barnes, and many others, and they have led to some knowledge of the character and methods of thought among children, while indirectly certain deficiencies in current child-literature and teaching have been clearly brought to light. The modes of procedure employed by different observers differ almost as much as the methods of study. Some inquirers examine all the children in each school selected; others look only to find children of a certain class, or note groups of children selected by the teachers. Dr. MacDonald's investigations are mainly conducted by the use of instruments for measurement of the body and of the sensitiveness of the surface to touch and pressure. His list of abnormal points for observation is curiously wanting in arrangement and classification, containing in succession "expression, hand balance, nutrition, pigmentation, ptosis, rachitism, epilepsy, lordosis, &c." A large number of facts are however, recorded in tables and diagrams, presenting much information. Some of his conclusions agree with those established by other observers—viz., that all forms of cranial abnormality are co-related with mental dulness; that the children of the labouring classes (poorer children) are less delicate—or at least not more delicate—than those of the upper social classes; and that several abnormalities in growth are often associated in the same child. This is markedly characteristic of imbeciles. There are certain well-established constitutional differences between boys and girls, the former presenting a larger proportion deviating from the average, while there is a smaller proportion of dull girls than boys. This proposition is important in many ways and is admirably illustrated by Mr. G. Udny Yule in a recent paper published in the Philosophical Transactions "On Association of Attributes in Statistics, with Illustrations from the Material of the Childhood Society, &c.," drawn from Dr. Francis Warner's observations and papers in the Journals of the Royal Statistical Society. Dr. MacDonald's book contains a full illustrated catalogue of anthropometric instruments collected from all countries, also a useful bibliography of the American and European literature of child-study.

WORD-DEAFNESS, WITH SPECIAL REFERENCE TO THE "NAMING CENTRE" IN THE BRAIN.

DR. GRAEME M. HAMMOND has published in the *Journal of Nervous and Mental Diseases* for July, 1900, an account of a case which appears to throw an interesting light on the localisation of the so-called "naming centre" in the brain, the existence of which was first postulated by Sir W. H. Broadbent and subsequently confirmed by a case reported by Dr. C. K. Mills of Philadelphia. In a former case recorded by Dr. Hammond and referred to in these columns[1] the man made an excellent recovery from the operation of trephining and soon regained the power of naming objects, but the word-deafness had never entirely disappeared and he found it difficult to pronounce words of three syllables or more. The following case is that of a man, aged 40 years, who was taken into the Charity Hospital, New York, on Jan. 9th, 1900, in a comatose condition. He soon recovered from the coma and there was no motor weakness or marked disorder of sensibility. The special senses appeared to be unimpaired. He was almost completely word-deaf and completely word-blind, besides being unable to write a word (agraphia) from dictation or copy a simple geometrical figure. He was, however, by no means stupid. Dr. Hammond thinks that if the patient had lived a diagnosis of lesion of the superior temporal convolution and of the angular gyrus would probably have been made, and yet neither of these regions had been implicated at all, as shown by the necropsy which revealed a softening of the middle third of the second temporal convolution, a position intermediate between the auditory word centre and Dr. Mills's "naming centre," the latter being located by Dr. Mills in the inferior or third

[1] THE LANCET, Feb. 24th, 1900, p. 552.

temporo-sphenoidal convolution. Dr. Hammond wished to emphasise the fact that in a given case of word-blindness or word-deafness it was not possible to say definitely what was the exact site of the lesion "further than that it involved some part of the speech area." In the discussion following the reading of the above communication at a meeeting of the New York Neurological Society Dr. Joseph Fraenkel stated that he had at present under observation a syphilitic man, aged 40 years, who suffered from impaired mental faculties and a spastic paralysis of the right upper extremity. In addition he was absolutely unable to name any object shown to him, but he could define the uses of the object. In this case Dr. Fraenkel felt convinced that there was a lesion in the arm centre sufficiently large to encroach slightly upon the speech centre. A slight lesion in the speech area would lead to marked disturbance of the higher and more complex functions associated with speech.

HERTFORD BRITISH HOSPITAL IN PARIS.

THIS hospital, on the death of the late Lady Wallace, was transferred to Her Majesty's Government who have appointed a committee to manage it, consisting of the Honorable Michael Herbert, C.B., Mr. Austin Lee, C.B., Mr. A. Percy Inglis (Her Majesty's Consul-General), Mr. John Pilter, and Mr. Alfred Coleman. Her Majesty's Office of Works recently instructed Professor Corfield, Inspector of Buildings for the Department, to investigate the sanitary arrangements of the institution, and he has reported that in his opinion the hospital, which had been closed for temporary repairs, cleaning, &c., should not be reopened until extensive alterations have been made in the present sanitary arrangements. Meanwhile, to obviate any inconvenience which may result from the non-admission of urgent cases among the British poor resident in Paris, instructions have been given to the resident medical officer to take immediate steps to obtain admission to a suitable French hospital for any such applicants.

THE CEREBRAL SYMPTOMS OF POISONING BY GAS.

ON Friday, Sept. 14th, four persons living in the suburb of Tottenham, in North London, were poisoned by gas that had escaped in a bedroom, with the result that two of the cases ended fatally and the other two sufferers only recovered after being taken to the hospital and medically treated. In a recent number of the *Neurologisches Centralblatt* (No. 13, 1900), Weygandt has published an account of his experiences of poisoning with the products of combustion of gas in an unventilated room. He heated the air in a bathroom by using a gas-stove, and then proceeded to heat the bath water by the same method. He allowed the air of the room to get vitiated to such an extent that a candle would not burn in it. He then stripped off his clothes and entered the bath. As he entered the room he states that he felt a pulsation in the temples, ringing in the ears and dizziness, and a feeling of anguish and distress. He was soon compelled to leave the bath, though he had no clear recollection of this, and went to his bedroom, where he became unconscious. On regaining consciousness he found himself lying on the floor. He now suffered from vertigo and intense headache, and had a general feeling of apathy and utter indifference to things around. He imagined at the time that he had had an epileptic attack. He rose up and went into another room and again became unconscious. On coming to he found that he had vomited, and was now feeling extremely weak and hearing a roaring sound in the head. He sent for a medical colleague, and when the latter arrived he (Weygandt) stated that he thought he was suffering from gastric irritation and poisoning due to some preserves he had eaten. Shortly afterwards, however, his recollection grew clearer and he was able to state the real cause—viz., poisoning by the products of combustion of gas in the bathroom. In cases of poisoning by ordinary illuminating gas the symptoms appear to be somewhat similar—viz., giddiness, præcordial distress, and shortness of breath (dyspnœa) soon passing into unconsciousness. The intense headache and the vertigo experienced after recovery or resuscitation are also characteristic of both kinds of poisoning. In Weygandt's case it was interesting to note the condition of amnesia for the events preceding each attack of unconsciousness, and for the gastric irritation and vomiting which preceded recovery. The practical lesson to be learnt is the necessity of having a full ventilation in sleeping-rooms and in bathrooms, and especially in the latter when gas-stoves or geysers are used to warm the air of the room or the water of the bath itself.

DEAD BODIES AND PASSERS-BY.

A CURIOUS piece of evidence, but one by no means without precedent, was given recently before the coroner for Market Drayton. The inquest was upon the body of a man which had been found head downwards in a small well or pit full of water sunk in a ditch by the wayside, and it was admitted by a witness that he had seen the deceased in this position and had made no attempt to extricate him, preferring to leave what might or might not at that time have been a dead body for the police to deal with, and proceeding to inform them accordingly; moreover, from the remarks of the coroner it was believed that other persons had exercised an equally ill-judged forbearance. This hesitation on the part of uneducated persons to interfere with what is apparently a corpse arises perhaps in some measure from a superstitious dread of handling a dead body, but has no doubt been encouraged by the attitude of the police, who, from the point of view of detectors of possible crime, not inexcusably prefer to see the body in its original position and to be able to search for traces of the criminal before such traces may have been removed without being properly observed. There is also some risk that the passer-by who endeavours to be the first to render assistance where a crime has been committed may himself be seized upon by a second arrival as being the criminal himself. It is painful to believe that a confusion thus arising in the minds of the ignorant may induce them to consider that they are under legal obligation to inform the police rather than to assist a fellow creature who may still be alive and within reach of succour, but at the same time it is consoling to reflect that only the very ignorant or the brutally indifferent would refrain from immediate action in circumstances such as those described at Market Drayton. Not to help a man still obviously alive would imply a callousness which is hardly human and which we hope is very rarely if ever met with.

A GERMAN MILITARY HOSPITAL.

THERE is a very well-executed plan, or rather model, of the new military hospital at Potsdam in the German section of the Paris Exhibition, and all visitors interested in army hygiene are presented with a pamphlet containing a full description of the establishment. The following particulars have been extracted from this document. The Royal Military Hospital of Potsdam stands upon elevated ground 1200 metres to the north of the town and about the same distance from the barracks. The enclosure contains nearly 12 acres, of which space the buildings occupy about one-eighth part, the remaining seven-eighths being taken up by roads, pathways, yards, and gardens. The total number of

beds is 309, including three for officers, each bed being allowed 9·5 square metres of floor space and 38·5 metres of cubic space. There are in all 14 blocks, the cost of construction per bed, without counting the price of land and material, having come to 4469 marks, or nearly £220 sterling. The cost of furnishing and equipment came to an additional 133 marks, or about £6 10*s.* per bed. In the machinery annex a sufficiency of power is generated to carry on the following operations, the transmission of force being effected through underground conduits. *a*. Warming by means of hot air or steam at low pressure. In the administration block coal in earthenware stoves is used. *b*. Ventilation. 60 cubic metres of fresh air per bed per hour are supplied, the air being filtered in a basement and either cooled or warmed according to season. For the removal of vitiated air aspirating chimneys have been provided in the walls. *c*. Elevation of water from deep wells on the premises and storage in tanks in the kitchen block. *d*. Electric lighting throughout, except in the offices, where gas is provided. *e*. Steam cookery on the system of A. Senking of Hildesheim. *f*. Steam laundry. *g*. Hot water-supply for baths and ablution rooms. *h*. Disinfection. The resident staff comprises one medical staff officer on guard, one chief inspector, two inspectors, nine junior assistants, one cook, four under-officers of police, 26 under-officers of the sanitary corps, 14 military ward-orderlies, and one compounder. The patients are divided into four classes according to their maladies, each class having its own medical director who has the assistance of one or more junior medical officers. The research laboratory is fully equipped in every way according to the most modern of ideas and in like manner the operation theatre is fitted with the most recent appliances and instruments. Special provision has also been made with a view to the medico-mechanical treatment of injuries and deformities, including massage, and there is a complete installation for the treatment of disease by electricity. Finally, the hospital and all that it contains are placed under the direction and control of a medical officer in chief who is held responsible for administration, including the maintenance of good order and discipline.

THE SPREAD OF INFECTION.

EXACTLY how to bring home to the working classes the necessity of isolating cases of infectious disease is one of the most perplexing problems of our present-day public health administration. In spite of popular lectures, of the wholesale distribution of leaflets, and even of the warning conveyed by occasional more or less heavy police-court fines, the history of nearly every epidemic demonstrates that "personal infection" plays a most prominent part in keeping the outbreak alive. One of the most flagrant instances of callous indifference to the spread of infection that has been brought to our notice comes from the Rhondda Valley in South Wales where a grocer's wife was fined last week for exposing herself in her husband's shop while suffering from scarlet fever. It appears that at the end of July she herself, three children, and a servant were attacked with scarlet fever and that one child died. It might be supposed that this last fact alone would have impressed her with the serious nature of the illness and that she would have been especially careful not to pass it on to her neighbours, but her conduct shows that she was quite unconcerned as to what happened to them. The woman was taken ill on July 25th and the sanitary inspector visited her house and gave the customary verbal and printed instructions as to isolation, laying especial stress upon the danger attaching to her taking part in her husband's business. Ten days after this she was seen by the inspector serving in the shop, and upon his representing to her the serious risk to which she exposed those with whom she came in contact she undertook to confine herself to the house for the requisite period. At the end of three weeks from the onset of the disease she was again seen in the shop by the medical officer of health who there and then examined her and found that she was profusely peeling and was in an undoubtedly infectious condition. Notwithstanding that she was told at this time that she would be prosecuted and that if she were again seen in the shop the fact would be pressed before the magistrates she was seen serving customers upon two subsequent occasions. The fine of £3 with costs amounting to 10*s.* inflicted by the stipendiary magistrate will hardly under the circumstances be considered excessive; indeed, it is almost justifiable to regret that section 126 of the Public Health Act, 1875, permits only a pecuniary fine and does not allow a term of imprisonment to be imposed. If a collier is found in a mine with a match in his possession he is sent to prison for imperilling the lives of his fellow-workmen, and it is not unreasonable for him to require that his wife and children when they go to purchase the household groceries shall not have their lives imperilled by such criminally thoughtless conduct as that upon which we have commented.

BRITISH MEDICAL BENEVOLENT FUND.

AT the September meeting of the committee of management 17 urgent applications for help were considered, but the balance available for grants was only £88 2*s.* 7*d.* Dr. Swallow of Clapham was elected an honorary local secretary and the committee will greatly appreciate offers of help from members of the profession willing to accept this office. Four annuitants were elected to fill vacancies caused by deaths since the last meeting. It is hoped that friends of the fund who have not yet done so will send in their subscriptions for the current year and also endeavour to interest others in the work of the charity.

ALARM OF CHOLERA IN SYRIA.

WE learn from our Constantinople correspondent that on Sept. 12th Dr. Coussa of Aleppo telegraphed to the health office in Constantinople that cases resembling cholera had occurred in the village of Toberkess-Ouchaghi, near Alboustan. All the patients died within 24 hours. The municipal medical officer of Marach and another medical man immediately proceeded to the place to investigate the circumstances and to ascertain the nature of the disease. They were also authorised to carry out all requisite measures of disinfection and to isolate patients suffering from illness of a doubtful character.

CEREBRAL TUMOUR WITH UNUSUAL OCULAR SYMPTOMS.

DR. MAX LINDE in a recent publication[1] records what is probably the first case of a cerebral tumour producing hemianopsia in one eye, in which the disease was verified by necropsy. The case was that of a man who suffered from symptoms of loss of smell and partial paralysis of the right external rectus muscle. There was some failure of memory. The affected eye was hemiopic, with preservation of macular vision, and Wernicke's hemiopic pupillary symptom was elicited. Ophthalmoscopic examination showed the presence of double optic neuritis with choked discs. The tongue when protruded deviated slightly to the right. The necropsy revealed a tumour of the brain in the region of the hippocampal and uncinate gyri on the right side and pressing upon the right abducent (sixth) nerve. This nerve was partially atrophied. The optic tract of the left side was apparently enlarged from the growth of the tumour which infiltrated its substance, and

[1] Monatsschrift für Psychiatrie, No. 7, 1900.

examination with Marchi's method demonstrated the presence of degenerated fibres (staining black) in the optic chiasma and in the inner part of the right optic nerve, thus accounting for the uniocular hemianopsia. The localisation of the growth in the uncinate and hippocampal gyri also served to explain the early symptoms of loss of smell. The position of the tumour was such as to render its removal by surgical operation impossible.

THE prize of 15 guineas offered by the Cancer Society, 315, High Holborn, through the liberality of Miss Scott, for the best original essay on the present state of "cancer science" has been awarded to Mr. Alexander Fraser, M.D. Aberd., of Queen's Park, Manchester, the adjudicator being Mr. George Brown, M.R.C.S. Eng.

THE autumn meeting of the Northern and Midland Division of the Medico-Psychological Association will be held at the Newcastle City Asylum, Gosforth, on Wednesday, Oct. 3rd, 1900.

THE opening address at the London School of Tropical Medicine, Connaught-road, Albert Dock, will be delivered by Sir William McGregor, M.D. Aberd., on Oct. 3rd at 9 P.M.

A REUTER'S telegram of Sept. 14th from Brisbane states that three fresh cases of plague have occurred there, bringing the total up to 123, with 53 deaths.

THE WAR IN SOUTH AFRICA.

WAS there ever a time when the daily press contained such an amount and such a variety of exciting news as at the present moment? Editors must be surfeited with the harvest of subjects and intelligence arriving from all quarters. The flight of ex-President Kruger, the rapid and, it may even be said, the tumultuous progress of the war in South Africa to its inevitable end, together with the telegraphic summaries of the evidence given before the Royal Commission; the stirring events in China, the West Coast of Africa, and elsewhere; the plague in Glasgow and its progress abroad in different parts of our Empire; the dissolution of Parliament to be rapidly followed by a general election—these form only a part of what meets the eye of the readers of morning and evening papers. There is not much need to have recourse to any news not "officially confirmed" in order to fill the columns of our newspapers. The result of it all if absorbing is rather bewildering and not conducive on the whole to habits of steady or concentrated attention or thought and in a general way, perhaps, unwholesome, but there it is and it is unavoidable.

We need make but little reference to the military events in South Africa, because we shall have been forestalled by what has appeared elsewhere in the daily press and such events are just now moving too rapidly to keep pace with them. Touching the South African Royal Commission we may say that the Commissioners have already accumulated a large amount of evidence at the scene of the war and have inspected most of the military hospitals there. Their work in South Africa will consequently soon be coming to an end, when they will return to this country, examine some other witnesses, and then proceed to sift the evidence and to formulate their report. We have no desire, and it would be improper, to anticipate the result. The investigation is in excellent hands and the legal training and ability of its president will ensure that the evidence is thoroughly sifted, weighed, and considered.

As we have said elsewhere, assuming Mr. Burdett-Coutts's allegations to have been correct, they were painful reading. It cannot be otherwise than distressing at any time to picture sufferings which are more or less inevitable in war, but to be told that they were such as might and should have been prevented or greatly mitigated seemed intolerable to people in this country. It was no wonder, therefore, that there was great anxiety to know what Lord Roberts had to say in the matter, and having learned his opinion and that of others who are in a position to know there is a natural feeling of great relief.

As regards Dr. Leigh Canney's communication to the *Standard* on the prevention of diseases in war, which has deservedly attracted a good deal of attention, we may take this opportunity of making a few remarks. It goes without saying that everyone must sympathise with the object which he has in view, and as there is sure to be hereafter a departmental inquiry into many questions connected with the field medical service and the Royal Army Medical Corps Dr. Canney cannot do better than take that opportunity for submitting his proposals for consideration. Some such idea must have frequently suggested itself but failed of being carried out owing to the practical difficulties in the way of doing it. Although it is probably quite true that in the case of South Africa the enteric fever epidemic was attributable to water pollution on a large scale it is not at all clear that this fever is always water-borne—or, in other words, that water is the sole and exclusive vehicle of its spread. If we may judge from their statements it has not been the experience of medical officers in India and elsewhere that immunity from disease can be guaranteed by the use of boiled water or of filters. As a matter of fact it has been found extremely difficult to keep the Pasteur-Chamberland or any other really efficient bacteriological filter in perfect working order on field service or to obtain promptly all the amount of filtered water that is required under the conditions of a campaign conducted on a large scale. It is also alleged to be a matter of experience that troops at the end of a long and fatiguing march will not act on the warnings given to them—the fact being that thirst dominates everything else for the time being under such circumstances. We fear that soldiers would not, consequently, be content to wait for even the half-hour required for the supply of the boiled water, and the movement and presence of dust in the atmosphere (dust storms) would probably soon nullify the sterilisation of the water. Moreover, we entertain some grave doubts as to the practicability of the transport and application of the means and appliances required for the efficient carrying out of these proposals—especially in the case of forced marches and rapid movements. *The* difficulty in all wars is invariably transport, and if military success is to dominate all other considerations in war supplies of food, forage, and ammunition must be forthcoming when and where they are wanted. If we could only get our enemy always to wait until we were ready with the necessary hygienic arrangements there would be no excuse for being unprepared. This is never likely to be the case, and however much we may be alive to the fact that contaminated water and soil and camp diseases are always and everywhere intimate associates it does not help us to know beforehand the particular place and time of their occurrence. Still, that is no reason why we should not apply ourselves to the problem before us and welcome every practical suggestion, and in that spirit we would urge Dr. Canney to put forward his proposals for the consideration of those more immediately concerned with the question which he has taken up.

TREATMENT OF BRITISH PRISONERS OF WAR AT PRETORIA.

AS mentioned in THE LANCET last week, the War Office published under the above heading on Sept. 12th a series of despatches, paged from 1 to 13, from which the following passages are taken, including the evidence of the medical witnesses in full.

From Field-Marshal Lord Roberts to the Secretary of State for War.
Army Headquarters, South Africa, Pretoria, June 27th, 1900.

SIR,—I have the honour to submit for the information of the most Hon. the Secretary of State for War a letter, dated June 7th, 1900, from Lieutenant-Colonel H. V. Hunt, R.F.A., to the Chief of the Staff, South Africa, reporting on the treatment of the prisoners of war at Pretoria and the proceedings of a Court of Inquiry which I directed to be assembled at Pretoria on June 11th to investigate the subject.

2. As regards the opinion recorded by the Court I would remark as follows:—

(*a*) I concur in the view that the treatment of the officers of the regular forces who were captured by the Boers appears to have been fairly good.

(*b*) That some of the prisoners who belonged to colonial corps raised in South Africa should have been confined in the gaol and

treated as criminals is opposed to the usages of civilised warfare, and the same remark applies to the British subjects residing in the Transvaal who were similarly treated because they refused to take an oath of allegiance to the South African Republic.

(c) The food of the non-commissioned officers and men is shown to have been quite inadequate in quantity and inferior in quality. There was no excuse for this, as supplies of excellent meat, bread, and vegetables are easily procurable in the Transvaal at a moderate price.

(d) That greater facilities were not given for religious ministration is much to be regretted.

(e) The inhuman treatment of the sick prisoners throws the greatest discredit on the authorities at Pretoria who must have been aware that proper hospital accommodation and equipment had not been provided, that suitable food and medical comforts were not forthcoming, and that the supply of medicines and medical appliances was wholly insufficient. That the deficiencies referred to in the correspondence were to some extent made good by the exertions and liberality of private individuals does not exonerate the Government of the South African Republic from its responsibility in this matter, and the indifference which was shown to the sufferings of the sick among the British prisoners is the more inexcusable when it is remembered that the sick among the Boer prisoners have invariably received the same care and attention as our own sick soldiers.

3. The efforts of Doctors P. H. Haylett and R. von Gernet to ameliorate the condition of their patients and the assistance rendered by the gentlemen mentioned in the latter's evidence, prominent among whom was Mr. J. Leigh Wood, officiating manager of the Natal Bank at Pretoria, are the only gratifying features in this correspondence. On the other hand, it would be difficult to condemn too strongly the conduct of Dr. H. P. Veale, M.B. (Cambridge), whose heartlessness in ignoring the disgraceful treatment of the sick prisoners and the remonstrances addressed to him by the medical officers in immediate charge of them calls for the severest reprobation.

I have the honour to be, Sir, your most obedient servant,
ROBERTS, Field-Marshal, Commanding-in-Chief,
South Africa.

From Lieutenant-Colonel H. V. Hunt, R.F.A., to the Chief of the Staff, British Forces in South Africa.

Pretoria, June 7th, 1900.

SIR,—I have the honour to report that I joined the main body of the officers who were prisoners of war on Dec. 22nd, 1899. They were then located in the Staats Model School, a well-built and commodious building and capable of holding about 100 officers comfortably—there were at that time about 70. The scale of rations for officers is attached (marked A), and they were permitted to supplement this by private purchases and a regular mess was established. * * * * I do not consider that the officers as a body have any real cause to complain of their treatment. * * * * I regret to say that I am unable to make such a satisfactory report as regards the treatment of the men. The scale of rations (copy attached, marked D),[1] already far too low, was frequently reduced. The one pound of meat often dwindled to considerably below that amount, and eventually had to be supplemented from the fund of which mention is made in copy of correspondence marked E.[2] For 14 days in February they were without tea or coffee. No meat was issued from Jan. 1st to 14th; the supply of vegetables was latterly quite cut off, as well as firewood from May 27th. * * * * But far more serious is the way in which our sick were treated. * * * * There were two hospitals, one at Racecourse and one at Waterval. At the former some beds were provided, but not sufficient, and no mattresses; at the latter nothing of the sort was given. When first occupied the shed was roofless and men with fever lay on a blanket, with their boots for a pillow and running water at their side. No medical comforts of any sort were provided and till the arrival of Dr. von Gernet, about the end of February, the condition of affairs was absolutely scandalous. I am sure that a great responsibility for this rests on Dr. Veale, who, as head of the Red Cross, was unwilling to risk trouble with the Government and imperil his own position. Dr. von Gernet is, however, a man of another stamp, and, first insisting on having the hospital in his own hands, he set himself to improve matters and worked so hard that his health at one time entirely gave way. * * * *
I omitted to mention that after great difficulty a list, completed up to April 20th, was furnished to the officers of the number of deaths, which then amounted to 50, and I believe six more have since occurred. The burials in these cases were always carried out by a sergeant, no minister being informed of them.

The men had great difficulty in reporting themselves sick, being frequently refused admission till so ill that they had to be carried to the hospital, and the accommodation was so limited that there were a large number of out-patients who should have been admitted.

The general opinion of the men is that they have received very bad treatment on above grounds.

I have the honour to be, Sir, your obedient servant,
H. V. HUNT,
Lieutenant-Colonel, R.F.A.,
Senior Officer of British Prisoners of War.

Extract from proceedings of a court of inquiry assembled at Pretoria on June 11th, 1900, and following days, by order of Lieutenant-General Tucker, C.B., commanding 7th Division, South African Field Force, for the purpose of inquiring into the treatment of British prisoners, but more especially the treatment of sick prisoners in the hands of the Boers in and near Pretoria.

President.

Lieutenant-Colonel W. E. Briggs, 2nd Battalion Hampshire Regiment.

Members.

Major E. Herapath, 2nd Battalion Lincolnshire Regiment.
Major A. C. Becher, 2nd Battalion Norfolk Regiment.

[1] See Appendix.
[2] Not printed.

The court, having assembled pursuant to order, proceed to take evidence.

Dr. P. H. Haylett, M.B. London, makes the following statement:—

In the middle of December, 1899, I was verbally instructed by Dr. Veale, the chief medical officer for military prisoners, to take charge of the hospital at the Racecourse. At this time most of the prisoners had been moved to Waterval, but the sick remained at the Racecourse. At the time I took over charge at the Racecourse there were about 60 sick. There was no adequate provision of medicines, considerable difficulty in obtaining stimulants, and no means (scrubbing brushes, &c.) of keeping the hospital building clean. I also had to complain of refuse from the hospital, such as decomposed vegetables, being left close to the building for an unnecessary length of time. The patients lay on straw mattresses on bedsteads, there were no sheets, and few pillows. The food supply was fair. I made no official complaint as regards this hospital, but sent in repeated requisitions for articles which were not complied with.

In the first week of January, 1900, I was sent out to Waterval as resident medical officer for the prisoners of war there. On the third day of my residence at Waterval I reported in writing to Dr. Veale condemning the sanitary arrangements and the water-supply, the hospital building and its equipment, in the strongest possible terms. As a result of this letter a Commission was appointed to investigate these matters, consisting of the Prisoner's Commission and Drs. Veale and Lingbeek. This Commission went out to Waterval to investigate the matter and view the hospital. At the railway station *en route* Dr. Veale suggested that I should not accompany the party, but this was overruled by the Field Cornet and I did accompany the party.

The result of this visit was a decision that the main hospital for the prisoners should be on the Racecourse and that the Waterval hospital should be only a collecting station. The President, South African Republic, strongly objected to this suggestion. Dr. Veale was equally strongly insistent on the Racecourse hospital being the main hospital.

Shortly afterwards I was ordered back to Pretoria, leaving no resident medical officer at Waterval. I resumed charge of the Racecourse hospital.

On Jan. 8th I wrote a letter to Dr. Veale, which is attached (this letter is signed by the President, Court of Inquiry, and marked M).[2] My next letter (marked N)[2] was written on Jan. 14th to Dr. Veale. It was now decided that Dr. Van der Horst was to take charge of the Racecourse hospital, while I was again to go out to Waterval as resident medical officer. On the 20th I went out there. On Jan. 22nd I sent Dr. Veale the attached report (marked O).[2] This letter, as also my preceding letters, elicited no reply and was followed by no improvement. On Feb. 6th I wrote Dr. Veale another letter which his secretary put into Dutch because he (Dr. Veale) objected to my letters being in English (this letter is marked P and attached).[2] To this letter I received also no reply. Between this date and my resignation of my appointment at Waterval I wrote to Commandant Hermann bitterly complaining of the want of meat and milk for the hospital. No result attended. I then resigned my appointment in a letter written in Dutch (marked Q).[2]

During the period I was resident medical officer at Waterval Dr. Veale did not visit the hospital except on the one occasion that he accompanied the Commission. My services to the British prisoners of war were entirely gratuitous.

Rudolph von Gernet, doctor of medicine, is examined by the Court and makes the following statement:—

On Feb. 19th, 1900, I received a letter from the Landroost of Pretoria informing me that on the recommendation of Dr. Veale I was appointed resident medical officer to the British prisoners at Waterval, to replace Dr. Haylett, who had resigned. I went about Feb. 20th to Waterval, where I found Dr. Haylett, and in company with him I inspected both the camp and the hospital. In the camp I found the prisoners housed in sheds built of strips of corrugated iron, open towards the front, and by reason of the corrugated iron sheets being old letting in the rain through the roof. The central road being higher than the floor level of the sheds the rain water drained into them. The men consequently in wet weather (and this was the rainy season) were lying in water. Each man had one blanket. There were no waterproof sheets and the men were lying on the bare ground.

The streets were in an indescribably filthy condition, rotting animal and vegetable refuse, and even human excrement, lay freely all over them, and the stench was awful. The latrines consisted of trenches seven or eight feet deep within 50 yards of the night camp in which the men slept. The heavy rain filled these trenches and the contents were floated all over the place.

The supply of drinking water was insufficient. It was stored in large tanks and I found men were in the habit of drinking indifferently from the drinking water-tanks and washing water-tanks and also of using the drinking water-tanks to wash their clothes in. The washing water was quite unfit for drinking. There was no organisation or discipline in these matters.

The prisoners' clothes were in rags, some being without trousers, others without coats or boots. The food supplied to the men was quite insufficient. Meat was only issued twice a week, and then only half a pound at a time. The result was that the men became very weak and liable to disease and I had to admit several men to hospital simply from weakness from want of proper food. They had plenty of flour. Men washed themselves and their clothes in the street, bringing the water from the tanks (which were in the night camp) in buckets. This practice tended of course to the spread of disease.

The building used as a hospital was satisfactory. The furniture was absolutely unsatisfactory. For instance, with over 60 in-patients and 20 orderlies there were only 21 bedsteads, 11 mattresses, and 49 blankets. I found nearly all the sick lying on the bare floor without bedding or pillows. There were 41 typhoid cases in the hospital and no suitable medicines whatever—that is, no medicines that I could prescribe for typhoid.

The food-supply for the hospital was quite inadequate. The ration for a typhoid case (Diet I.) was supposed to be—

1 bottle beef-tea, made of 1lb. of meat.
2 bottles of milk.

[2] Not printed.

Frequently no meat was received, and consequently no beef-tea could be made. The milk seldom arrived.

Diet II. was supposed to be—

1 bottle of milk,
1 bottle beef-tea (as above),
Arrowroot, sago, biscuits, and rice;

but the meat and milk came irregularly.

Matters being in this condition I went direct to the president of the committee, "Bewaaking Krijgsgefangenen," and told him of my complaints. He assembled the committee the same afternoon and I appeared and described the state of things at Waterval. The committee, it was evident, had not been previously aware of any complaints or shortcomings in connexion with the treatment of the Waterval prisoners. The committee became excited and sent for Dr. Veale. I was present and heard Dr. Veale asked who was the chief of the hospital at Waterval. Dr. Veale answered that he himself was the chief in his capacity of medical officer to the Staats Artillery. Asked again who was the responsible doctor Dr. Veale said, "the resident doctor." The committee next asked Dr. Veale to whom the resident doctor was responsible. Dr. Veale answered, "To the committee." Asked why he did not report complaints and supply medicines required from the hospital Dr. Veale said he had received no letters on the subject. The committee there and then decided that Dr. Veale was to have nothing further to do with the hospital at Waterval and that the resident medical officer was the chief and would report direct to the committee. Dr. Veale stipulated that the supply of medicines for the hospitals should still go through him and this was acceded to by the committee. A week later, on my reporting that medicines were not satisfactorily supplied, the committee authorised me to get my medicines where I liked. After this President Kruger was personally and constantly in communication with the committee and with Waterval district by telephone asking if the prisoners had everything they required. After Dr. Veale's connexion with the hospital ceased I obtained from the committee the cleaning and levelling of the streets of the camp; the making of proper latrines; the supply of a second blanket and a stretcher to each man; the supply of boots and clothing; and the placing of the drinking-water supply, by sinking more wells, &c., on a satisfactory footing; and an increase in the meat. There were other necessities for the sick, such as milk and stimulants, which I was unable to obtain in sufficient quantities or fast enough from the Government. These and everything else I could possibly want I obtained from Mr. Leigh Wood. The average of deaths to the total number who passed through the Waterval hospital is 6·6 per cent.

I should like to have recorded the names of individuals who afforded me the greatest assistance in remedying the dreadful state of affairs I first found at Waterval:—

Mr. Kalt, secretary to the "Bewaaking Krijgsgefangenen."

Burghers.

Mr. Hermann, Commandant, Waterval.
Lieutenant Haupt, Secretary Rothman, Architect Van de Stadt, } On Commandant's Staff.

Prisoners.

Captain Nesbitt, Bechuana Protectorate Regiment.
Lieutenant Fulford, R.N.
Sergeant Dudley, 18th Hussars.

Civilians.

Mr. Leigh Wood and his committee.
Mr. Marks, of Lewis and Marks.
The Rev. H. W. Goodwin, Wesleyan minister.

Herbert Prior Veale, Bachelor of Medicine, Cambridge, being examined by the Court, the following questions are put to the witness and his answers are recorded below:—

Q. 1.—What was your position with reference to the prisoners of war at the Racecourse?

A.—Drs. Knobell, Lingbeek, and myself were three medical members of the Transvaal branch of the Geneva Red Cross Society. We took it in turns to take an ambulance train to the front, and when Dr. Knobell went to Natal I relieved him of the care and medical attendance of the prisoners of war at the Racecourse. This would be in November. I had nothing to do with the sanitary arrangements. It would, however, be my duty, as medical officer attending the sick, to notice and try to remedy anything in the arrangements of the hospital or its precincts which was prejudicial to health. I brought several such points to notice and consider that everything in the Racecourse hospital was reasonably satisfactory when I left at the beginning of December for the Free State.

Q. 2.—Were you responsible for the medical and sanitary arrangements for the prisoners of war at Waterval?

A.—No. I was sent over to Waterval in company with Dr. Lingbeek by the Commission at that time in charge of the prisoners to make a report *re* the sanitary arrangements, suitability of Waterval as a camp, water-supply, &c.; and we made the report to the effect that the place was unsuitable as a camp, but as the camp could not be moved we suggested a different water-supply, different latrine systems, a sanitary police as the men were behaving in a very dirty manner there. This was the only occasion on which I visited Waterval. Dr. Haylett went out with us on the above occasion. From time to time the Red Cross Committee were allowed to send out a delegate to ascertain whether they could do anything of benefit, and the delegates made written reports to the committee.

Q. 3.—Did you receive any letters from Dr. Haylett making complaints and suggestions with reference to the condition of sick prisoners at Waterval?

A.—I received no letters with reference to the condition of the prisoners but received two or three letters from him in English with regard to the supply of medicines. I was told afterwards that Dr. Haylett had written me no less than 12 letters, not one of which I received. I saw Dr. Haylett, on an average, every other day, and he never mentioned having written these letters.

Q. 4.—Did you or did you not receive the letter marked M from Dr. Haylett, which has now been read to you?

A.—I cannot say whether I received this identical letter or not, but I did receive some letters from Dr. Haylett before the date of my visit to Waterval, which referred merely to the supply of medicines. I consider this letter to refer merely to the supply of medicines.

Q. 5.—Can you recollect answering any letter that you received from Dr. Haylett?

A.—I cannot recollect answering any particular letter, but I will undertake to produce my letter-book, in which copies of all letters written by me are kept, and if I ever wrote to Dr. Haylett copies of my letters to him will be found there.

Q. 6.—Did you receive the letter marked N, or the letter marked O, which have now been read to you?

A.—No. I have never seen or heard the contents of either of these letters before.

Q. 7.—Did you receive the letter in Dutch marked P which is now handed to you?

A.—I did receive the letter marked P and forwarded it to the Commission.

Q. 8.—Did you answer this letter to Dr. Haylett?

A.—This letter was written in my own office and any answer would be verbal. The letter was written for the purpose of being forwarded by me to the Commission.

Q. 9.—What is your own opinion as to the extent of your connexion with, and responsibility for, the hospital at Waterval?

A.—I do not consider that I had any responsibility whatever, and my only connexion with the hospital was that I was practically a supplying chemist and Dr. Haylett drew his medicines through me.

Q. 10.—Were you responsible in any way that the British prisoners in gaol received proper medical attendance?

A.—No; I was not responsible in any way. Lieutenant Tarbutt and another prisoner, a land surveyor, were brought very ill with typhoid to the Bourke Red Cross Hospital (of which I was the doctor) from the gaol and died there.

Q. 11.—Do you think that Lieutenant Tarbutt and the other prisoner contracted the typhoid fever in gaol?

A.—Yes.

[The non-medical witnesses who gave evidence before the court of inquiry were—(1) Mr. J. Leigh Wood, manager of the Natal Bank, Pretoria; (2) Rev. H. W. Goodwin, Wesleyan minister, Pretoria; (3) Mr. Johannes Jacobus Haupt, assistant commandant of the prisoners' camp; (4) Mr. Egbert Kalt, secretary to the Bewaaking Krijgsgefangenen; (5) Sergeant S. Dudley, 18th Hussars; (6) Captain R. H. Nesbitt, Protectorate Regiment; (7) Mr. C. G. Dennison, intelligence officer; and (8) Mr. C. V. de V. Van der Spuy, accountant of the National Bank at Zeerust. A letter was also received from the Rev. J. Godfrey of Pretoria stating that after the escape of Mr. Churchill he must discontinue his regular ministrations. The opinion of the court and the scales of rations are given hereunder.]

OPINION.

The Court, having carefully considered the foregoing evidence, so far as it relates to the allegations contained in the letter of Lieutenant-Colonel H. F. Hunt, R.F.A., dated June 7th, 1900, are of opinion:—

1. That the treatment of the officers of the Imperial Army who were prisoners of war appears, on the whole, to have been fairly good.
2. That the treatment of some of the colonial prisoners was severe and unjustifiable, inasmuch as they were thrown into a common gaol and not treated as ordinary prisoners of war.
3. That the non-commissioned officers and men were very badly fed and the scale of diet (which was not even adhered to) was, in the matter of meat, a starvation ration.
4. That religious ministration was sparingly granted.
5. That the general treatment of sick prisoners was very bad and has not been exaggerated, and that there is no doubt the prevalence of sickness and the many deaths which occurred amongst the prisoners were attributable to the gross neglect of most ordinary sanitary precautions.

Signed at Pretoria this 24th day of June, 1900.

W. E. BRIGGS, Lieutenant-Colonel, 2nd Battalion Hampshire Regiment.
E. HERAPATH, Major, 2nd Battalion Lincolnshire Regiment.
ANDREW C. BECHER, Major, 2nd Battalion Norfolk Regiment.

Pretoria, June 25th, 1900.

Deputy Adjutant-General, Army Headquarters,
I concur in the opinion of the Court,
C. TUCKER, Lieutenant-General, Commanding 7th Division.

APPENDICES.

A.

Scale of Rations supplied to Officers.

Half a pound meat daily; one pound bread daily; sugar as required; salt as required; potatoes as required (supply fails sometimes); tea as required; coffee as required. Meat has generally been of very inferior quality. No sugar was supplied from Jan. 15th to March 10th, Government stating that sugar at 2*s.* 6*d.* a pound was too expensive for a ration.

D.

Scale of Rations supplied to Men.

Half a pound of meat twice a week; half a pound of potatoes daily; half ounce tea or coffee daily; one pound bread or biscuit daily; half pound Boer or mealie meal twice a week; about two ounces rice about twice a week; one pound fresh vegetables once a week (carrots and vegetable marrows); sugar occasionally; salt sufficient; very little pepper. Bread often sour. Supply of vegetables stopped in May.

SOME NOTES ON THE CAMPAIGN IN AUGUST.

BY ALFRED D. FRIPP, M.S., F.R.C.S.,
SENIOR SURGEON TO THE IMPERIAL YEOMANRY HOSPITAL.

(*Continued from p. 826.*)

One of the essential differences between a civilian and a military hospital is that in the latter many of the patients are convalescent and not only need no nursing but are well enough to resent rather the restrictions upon their freedom which are entailed by the presence of a nurse. We got over this difficulty at the Imperial Yeomanry Hospital by arranging the huts and tents roughly in three classes—A, B, and C. Class A includes all the acute and serious cases and the bedridden patients. These are housed in huts. Both a day nurse and a night nurse are provided for every 22 to 34 beds (according to the size of the hut), with an "extra" sister lent for a longer or a shorter time when necessary. Thus every bad case gets a really adequate share of the nurse's attention, which cannot be ensured when one has to divide her attention among many huts or tents containing 100, or perhaps 200, cases of all sorts and degrees of severity. Class C is the "convalescent camp," and only those patients are sent into it who are on ordinary diet and taking no medicine, and who require no nursing or even temperature-taking but only the daily visit of a medical officer and the disciplinary oversight of an orderly. The patients are housed in a group of bell-tents separate from the rest of the hospital. Each tent accommodates three beds luxuriously and four with ease, while at times of stress a fifth or a sixth patient can be made comfortable. The occupants of each tent are responsible for its good order and cleanliness and for their own "service." Class B includes the patients who have recently come out of the "serious" huts in Class A, or any that are not sufficiently ill when admitted to hospital to be sent into these huts. A few of the patients are still bedridden, but none are acutely ill, for directly such a case occurs he is moved back into Class A. On the other hand, as soon as they are well enough the patients are moved on into Class C. The patients in Class B are housed in the tortoise and hospital marquees, each of which holds eight to 10, or in times of stress even 13, beds. They are looked after by the less experienced amongst the sisters (the best qualified being promoted to fill any vacancy that may occur among the staff specially selected for service in Class A), each sister on day duty having 50 beds and on night duty 100 beds (about) to look after.

This plan has worked out very well. We are never hard up for vacant beds in Class C, because we can always put extra beds into the bell-tents or telegraph to De Aar for carriages and send 100 patients down the line to Victoria West where there is a convalescent camp for 1000 men. There are similar camps for 1000 convalescents each at Bloemfontein, Norval's Pont, and Cape Town and smaller ones elsewhere along the railway line. These convalescent camps were not instituted till comparatively recently—about two and a half months ago, I believe. They have been of great service, for by enabling the hospitals to avoid blocking up their own beds with convalescents who are not yet quite fit to return to duty they probably prevented a breakdown during the height of the enteric fever epidemic. Only patients who are fully convalescent and fit to eat ordinary rations and who need no "extras" or nursing or medicine must be sent to these camps, for they are in no sense staffed or equipped as hospitals. There is a medical officer at each camp and a handful of orderlies, but the nature of the establishment is indicated by the fact that the commandant is a combatant officer.

We have never had any difficulty in providing beds in Class B. There are always a good many patients lingering there who are fit to go into Class C. Class A is where congestion is apt to occur, for the sister and the medical officer who have seen a patient through his operation or through the acute stage of his illness are naturally reluctant to "lose him," and typhoid fever is a disease which pins its victim to the same bed for a long time; but there are two very human emotions which are found in practice to compensate for this tendency and to make for the evacuation of the beds sufficiently early to ensure that there are always enough vacancies, even in Class A, to satisfy any sudden call. The first is that a sister hates to "upset her ward" by crowding in extra beds, which is her only alternative, and the second is that the patient is looking forward to his move from Class A to Class B, because it is well known to carry with it an increase of freedom (there is not the slightest doubt that the vast majority of Tommies prefer the tents to the huts) and also an alluring variation of diet. This plan has worked very well with us, and if a new army medical service had to be schemed I cannot but think that it would be a good thing to have a "convalescent camp," or Class C, attached to each non-mobile military hospital; or to put it in another way, I should like to see each non-mobile military hospital divided into two equal-sized parts. In practice it is very easy for either half to enlarge temporarily at the expense of the other when necessary. Of the two halves X (the hospital proper) would be accommodated in huts or tortoise-tents or hospital marquees, or buildings when available, and would be provided with nurses in the proportion of one to every 10 beds, while Y (the convalescent camp) would be provided with bell-tents. Since it would be a very convenient thing if a large military hospital was an exact multiple of a small one and a very good thing if large and small alike could be arranged on a plan which would permit of easy and rapid expansion from a peace to a war footing by means of the preconcerted assimilation of civilian reinforcements, I would suggest that four classes of non-mobile hospitals should be instituted. The equipment of each class of hospital should always be kept up to war strength, but only half of it should be in use while stationed at home, when it should be served by that half of the *personnel* which is detailed to it by the Royal Army Medical Corps. The other half of the equipment would only be brought into use and the other half of the *personnel* would only be appointed when the hospital was sent on foreign service, and such *personnel* would be chosen from civilians who would be temporarily attached. Convenient sizes for these four classes of non-mobile hospitals would be the following:—

	Class I.	Class II.	Class III.	Class IV.
Hospital beds:				
On home service	400	200	100	50
Add when on foreign service	400	200	100	50
Convalescent camp beds:				
On home service	400	200	100	50
Add when on foreign service	400	200	100	50
Total	1600	800	400	200
Medical officers:				
Royal Army Medical Corps	9	6	4	3
Add when on foreign service—				
Civilians qualified	15	10	5	2
Civilians unqualified	14	8	4	2
Total	38	24	13	7
Nursing sisters:				
On home service	40	20	10	5
Add when on foreign service	40	20	10	5
Total	80	40	20	10
Wardmaids:				
On home service	16	8	4	2
Add when on foreign service	16	8	4	2
Total	32	16	8	4

The numbers, especially of the medical officers, are only roughly suggested. The idea is that a hospital of any size should be able to divide rapidly on emergency into two equal smaller hospitals and to despatch one of these smaller hospitals with a full staff and yet retain enough officers and non-commissioned officers to work its own beds until a reinforcing draft arrives. The equipment of one class should differ from that of another class in hardly anything but quantity. The rank of the senior officer, and indeed of the officers and non-commissioned officers under him, should of course be higher the larger the hospital. In this way steps up the ladder of promotion would be provided for on a steady scale. There should be one "sister" to every four "nurses," and promotion should be open from the latter to the former rank. I am strongly in favour of the employment of unqualified but highly-trained medical students for

foreign service. The largest or first-class hospitals would probably seldom be mobilised, but under this scheme each such equipment would easily be available for forming smaller units.

There is a good deal of difficulty in securing the services of the right class of woman to act as "wardmaid," but I think that if an endeavour was made to form such a class it would be found very useful, especially on active service. Not only do the nurses require waiting upon but there is a good deal of work of one kind and another about a hospital besides actual nursing which is better done by women than by men, notably the laundry and the dairy work.

There is a horrible custom which is apparently universal throughout South Africa (the land of empty meat-tins and of people who are too lazy to build proper drains or to bore for water) of bringing the milk to market in old glass and beer-bottles and of selling it at so much a bottle. The vendor takes no steps to clean the bottles and he considers that six of them, whether large or small, full or partly empty, are equal to a gallon. Now here was an instance in point. Until we took the collection, sterilisation, and distribution of the milk out of the hands of the army man and put it into the hands of one of the sisters the milk was continually going sour and the farmers were being regularly overpaid. But the sister very soon taught them to measure it properly and already she has saved the committee her year's salary, though she delegates the overseeing of the actual work of the dairy to whichever sister is temporarily incapacitated from work in the wards. Again, we most fortunately brought out from England Miss Cheesman to act as housekeeper and business manager to our nursing sisters. She has proved simply invaluable, for, in addition to her other work in which she has been assisted by 10 wardmaids, she has taken entire charge of the work of the laundry which, in a camp of 600 to 1200 inhabitants, is a big job by itself. It is to be hoped that the time has come when it will be considered criminal ever again to dispatch a non-mobile sanitary hospital from England without a steam steriliser and a complete laundry and large filter plant all capable of being worked by one boiler. The expense cannot matter to a country like England, and if by any bad chance it should really prove impossible to work in any particular case we should at least feel that we had done our best to put modern ideas of cleanliness at the service of Tommy when sick. To put it on the lowest possible ground it is an expensive thing to the country unnecessarily to lose men over whose training and transport and feeding much money has been spent, and it is not much good to go to the expense of keeping up hospitals and a Royal Army Medical Corps if we do not give them the best possible tools for staving off disease. "All right, try it if you like, but when you are as old as I am you'll know the uselessness of it," is a mode of damping the endeavour to bring modern methods and appliances to the service of the State which has become considerably and deservedly discredited of late. The pity is it was ever permitted to curb effort, but it is to be hoped that it is now dead, along with several other methods of doing things which this war has proved to be obsolete.

Small as has been the amount of operative surgery done here in the last few weeks I have had a few cases both of ordinary or civil surgery and of bullet-wounds which it may be of interest to record briefly. Among the former are the following:—

1. A successful nephrolithotomy urgently called for in an officer who was invalided from Pretoria with about the most continuously agonising pain that I have ever seen caused by a stone. It proved to be a small oxalate one, lying loose in the pelvis of the kidney, and its removal was attended by immediate and complete relief and was followed by perfect healing.

2. A large chronic burrowing abscess of the sacral region which rendered another officer quite unable to keep upon his horse. He had had an abscess there for four years, during which it had twice been "opened." A small caudal dimple attracted my attention and under the anæsthetic it admitted the blunt end of an ordinary small probe for an inch—passing upwards in the subcutaneous tissue of the middle line. I slit up this epithelial tube and found that it contained a wisp of hairs varying from an inch to an inch and a half in length. Their attached ends were at the skin orifice of the tube and their free ends were lying loose in the cavity of the abscess. I excised the whole suppurating area, leaving a wound from two to three inches wide and four inches long, but, as in this wonderful land it seems to make very little difference to the healing of a wound whether it be really clean or only slightly infected, I brought the surfaces together by superficial and deep stitches. Sure enough nature was equal to the occasion and immediate union occurred, not of quite the whole length of the wound but throughout enough of it to curtail very materially the time which it would have taken if the whole area had been left open to granulate up.

3. Of typhoid abscesses we have seen very little, only a few subcutaneous and parotid ones. We have only opened three abdomens in typhoid fever patients. Mr. Raymond Johnson did one, but there was advanced general peritonitis and the patient died. I have done two, the first with an exactly similar result to the last case. The second was in a vigorous, well-nourished patient who had come to us a few days before as convalescent from simple continued fever. Dr. Black, his medical officer, had taken the precaution to keep him in bed on milk diet for a few days and while still under this treatment he was seized with sudden colic. Dr. Washbourn and Dr. Black asked me to come and see him with them. The pain was localised to the right iliac fossa which was also tender and very hard and the whole of the abdomen moved very little with respiration. He had nausea, but not vomiting. There was not much evidence of shock, the pulse being normal in rate and volume. We thought it was very doubtful whether there was any perforation, but we considered that it would be safer to explore at once than to wait. I made an incision in the right linea semilunaris half way between the anterior superior spine and the umbilicus and explored the whole of the ileum and the ascending and transverse colon. All we found was (*a*) some huge mesenteric glands and (*b*) several swollen areas within the ileum on its unattached surface (the ulcers seen in our mortuary here in cases of enteric fever have often been of the hypertrophic variety). We found (*c*) one such mass making the ileo-cæcal valve feel as if there was the apex of an intussusception projecting through it, (*d*) that the appendix was some three and a half inches long and of the size of an ordinary lead-pencil and so congested that it felt like a tightly injected brachial artery in which the injection had not yet quite "set," and (*e*) that the peritoneum about the ileo-cæcal junction was acutely congested but quite smooth. I immediately sewed up the wound and primary union occurred, while the patient went through a relapse of his enteric fever. He got well and went home.

Before leaving the subject of civil surgery I would add that morphia seems, when called for, to be needed in larger doses out here than at home and that we are constantly seeing fresh cases in which head symptoms that look at first sight as if they were due to bullet wounds or to concussion rapidly cleared up under a course of iodide of potassium.

Among the cases of gunshot wound at present under my care are:—

1. An officer from whose calf Mr. Hall-Edwards's most accurate x-ray localisation enabled me to remove with great ease and rapidity no fewer than 10 pieces of a leaden bullet which were lying at depths varying from half an inch to two inches and keeping up suppuration.

2. A most interesting and severe case of bullet wound of the base of the skull. The bullet passed inwards and slightly backwards and downwards through the zygoma on the right side. There was complete facial and auditory paralysis and considerable involvement of the fifth cranial nerve all on that side. No exit wound could be found. There was such violent bleeding from the right external auditory meatus that after repeated trials of other means of arresting it I was driven to ligature the common carotid. As there was also commencing optic neuritis with rigors and some swelling just below the mastoid process I thought it wiser to put a ligature round the internal jugular vein at the same time. The hæmorrhage ceased, the wound in the neck healed perfectly, and for a time all went well, but later an abscess developed in the pterygoid, mastoid, and parotid regions and hæmorrhage from the meatus recurred. So I made an incision widely curved from the entrance wound of the bullet backwards above the pinna and downwards behind it to the tip of the mastoid and turned the flap downwards with the pinna attached. The condyle of the mandible and several fragments of bone derived from the ramus and from the pterygoid plates were found lying loose in a large abscess among the pterygoid muscles and were removed. The abscess cavity was drained and the hæmorrhage arrested by plugging and by leaving a pair of Spencer Wells's forceps

on a vessel in the periosteum of the mandible. The patient made an uninterrupted recovery and despite the loss of one of the condyles of his mandible he can now masticate ordinary diet, including chicken and beef. The optic neuritis did not progress, but on the contrary Mr. Cargill thinks that it may be clearing up. In fact, the subject of these extensive injuries has now no signs remaining except the facial paralysis, the unilateral deafness, and the scars.

There is a group of three interesting cases of paraplegia.

1. In this case Mr. Hall-Edwards localised the bullet lying two inches deep, parallel with and almost accurately in the middle line with its nose downwards at the disc between the first and second lumbar vertebræ. The entrance wound was three inches to the left of the twelfth dorsal spine. Its low position in the canal gave room for hope that the cord at least was not irretrievably damaged, and as there was severe pain shooting down the left leg which, with the sphincters of the bladder and rectum, remained absolutely paralysed after 10 weeks, while the right leg had recovered almost completely within a few days of the infliction of the wound, I removed the laminæ of the first and second lumbar vertebræ and extracted from the spinal canal the bullet and also a spicule of bone of about the same size and shape which had been driven in and which, with the bullet, was compressing the theca severely. I did not open the theca, which expanded to its natural size directly the compressing agents were removed. The wound healed well. The pain down the leg ceased at once and within a fortnight of the operation the patient was able to hold his urine for two hours (which he had never been able to do since the injury) and there was a most encouraging return of function in some of the motor and sensory nerves of the left leg.

2. This patient presents complete motor and sensory paralysis of both lower extremities without any wasting of muscles and without any visceral symptoms following on an injury which must have been a slight one. The history he gives is that a shell knocked a basket out of his hand and buried itself, without exploding, in the ground close by. He lost consciousness and fell to the ground and has been in his present condition ever since he was picked up. We have been watching him for some weeks and I have formed a strong suspicion that he is malingering.

3. This patient has apparently had his cord completely and cleanly divided by a Mauser bullet which crossed it transversely at the junction of the cervical and dorsal spine. The wound of entrance is two inches above the left clavicle at the anterior border of the trapezius. Mr. Hall-Edwards got an excellent skiagram which shows no abnormality except a bullet lying loose in the right axilla. There is complete anæsthesia below the region supplied by the cervical plexus. There is no zone of hyperæsthesia. The breathing is entirely diaphragmatic. There is no weakness in the arms but absolute paralysis of the intercostals and of all the muscles below them. The sphincters are completely paralysed and there are very large bedsores. The reflexes are completely absent. He has no pain except a little in the abdomen when he is rolled over.

Though I am glad to say we have not yet had to break the good record that I told you of in the matter of amputations, yet we have had many patients sent to us who have lost a limb in the field hospitals, where of course most of such operations are chiefly called for. I wonder what arrangements have been made for seeing that each stump is fitted with that particular appliance which is most suited to the needs of the owner. The maimed of our heterogeneous army belong to very varied classes and walks in life, and the appliance which is the most suitable for a farm or factory labourer is sometimes the most unsuitable for a clerk or policeman. Even in times of peace one frequently sees a bad selection made, and as the future ability of each patient to help himself and others depends so much upon the adaptability of the appliance provided for the particular end which is in view there ought to be a really good selection based, not upon the question of expense—that ought not to arise and I believe does not—but upon the question of the particular requirements of the particular case.

Deelfontein.

THE IMPERIAL YEOMANRY BASE HOSPITAL.

BY L. V. CARGILL, F.R.C.S.,
OPHTHALMIC SURGEON TO THE HOSPITAL.

There have been the following changes in the staff. Mr. A. D. Fripp, Mr. Raymond Johnson, and Dr. H. W. Saunders have left for England. Mr. W. Turner and Dr. L. E. C. Handson, with Mr. E. N. Thornton as dresser, have gone to the Mackenzie Farm Branch at Cape Town, where Mr. Turner is acting as principal medical officer. The medical side consists of Dr. J. W. Washbourn, senior consulting physician, and Dr. A. Elliot, Dr. G. E. Richmond, Dr. C. W. Breeks, and Dr. Barclay Black. Mr. Hamilton A. Ballance has become the senior consulting surgeon, the other surgeons being Dr. J. B. Christopherson, Mr. W. C. G. Ashdowne, Dr. A. P. Parker, and Dr. H. W. Bruce. The writer still remains in charge of the ophthalmic department and Mr. Hall-Edwards in charge of the x-ray department. The dressers are Mr. J. Atkins, Mr. A. de V. Blathwayt, Mr. A. Pearson, Mr. A. C. Ransford, Mr. O. Richards, Mr. Hawkins, and Mr. Sells Dr. Elliot and Dr. Parker, who have been away on sick leave, have returned to duty. Mr. D. J. Greenfield, one of the dressers, who has had enteric fever, has been away on sick leave to Lady Gifford's convalescent home at Norval's Pont, and is returning to England. Of the nursing staff Sisters Brereton and Leggatt have gone to the Pretoria branch, and Sisters Stephenson, Cable, and Cooper to the Mackenzie Farm Branch, Cape Town.

Under the supervision of Mr. Hall-Edwards electric light has now been installed in the cruciform building containing the operating theatre and surgical store, the x-ray and photographic rooms, and the surgery. It is proving a great boon. The dynamo is worked by a four horse-power oil-engine. The Russian bath which has been opened in the laundry building is a great success and is largely patronised. It is managed by Hale-Smith, the chief masseur.

There are 770 patients in hospital, 38 of whom are officers and nearly one-half of the total number belong to the Imperial Yeomanry. Patients are being received and discharged daily, and a week ago No. 4 ambulance train brought 17 officers and 95 men from Wynberg, most of whom came from General Clements's force. They were nearly all surgical cases. Judging from the few cases which we now have of enteric fever and dysentery, the epidemic has completely subsided. The majority of the medical cases now admitted consist of various forms of rheumatism. As a rule, the rheumatism takes a subacute form which is not readily amenable to treatment. Presumably, its prevalence is due to the weather which, contrary to the general rule, has been not only cold but exceptionally damp, in spite of this being the dry season for up-country. In addition to rheumatism a not inconsiderable number of cases of malaria have been admitted, the patients either being old sufferers from malaria or having contracted the disease north of Bloemfontein and Kimberley. One of the wardmaids has developed measles, but from what source has not at present been determined. There have been no further cases of scarlet fever. Among the enteric cases there have been several cases of typhlitis, usually recrudescences of a former attack. A case recently operated on by Mr. Ballance is now doing well.

Dr. Washbourn reports that musk has been of great value in the treatment of certain cases of enteric fever. In a case in which the patient was comatose and almost pulseless rapid improvement ensued upon the administration of musk in five-grain doses every four hours. The improvement was maintained and the patient is now convalescent. In another case of enteric fever with persistent pyrexia continuing after the other symptoms had subsided the administration of salol caused the temperature to return to normal in a couple of days. It would appear that the pyrexia was due to putrefactive changes occurring in the intestinal canal which were prevented by the salol.

In addition to the operations performed on wounded men there has been a fair amount of ordinary civil surgery lately. During the last week Mr. Ballance has operated on two cases of mastoid disease following recent otitis media. In one case the patient was suffering from enteric fever and in the other from scurvy. There are in hospital a considerable number of cases of compound fracture of the lower limb with extensive and troublesome necrosis needing repeated operations.

The weather here has been very variable. A few days have been genial, but other days have been bitterly cold, windy, and gloomy, and we have had snow and hail as well as rain. Fortunately last Wednesday was a fine day for the athletic sports which had been chiefly organised by Captain Mosley Leigh of the Cheshire Yeomanry. They proved a great relief to the monotony of camp life and were immensely appreciated by all.

We are expecting the Hospital Commission here Thursday, and our chaplain, the Rev. J. Blackbourne, has

gone to Cape Town to give evidence before them regarding his experiences as chaplain to the Sixth Division on the march from Modder River to Bloemfontein.

Deelfontein, August 27th.

THE PLAGUE IN GLASGOW.

BETWEEN Sept. 10th and Sept. 14th no fresh cases of plague were announced in Glasgow. On Saturday, Sept. 15th, however, one fresh case was officially announced—namely, that of a ward-cleaner in the Belvidere Hospital. The patient had been inoculated and the disease has only shown itself in a very mild form. The total number of cases on the morning of Sept. 15th was 17, suspected cases one, persons under observation 115.

On Sept. 17th, however, five additional cases were reported. Four of them occurred in one family and the fifth was the wife of a worker in the Belvidere Hospital. The family were known to have been in contact with previous plague cases. The figures, therefore, for Sept. 17th were: total number of cases, 22; suspected cases, one; persons under observation, 115.

Up to the night of Thursday, Sept. 20th, no further cases had been reported, so that the figures stood thus: total number of cases, 21; suspected cases, one; persons under observation, 105. The decrease of one in the number of cases is due to the death of one of the family reported as plague-stricken on Sept. 17th. Thus five deaths in all have occurred—namely, two in the Belvidere Hospital and three outside.

The Glasgow magistrates held a private meeting on Sept. 12th and decided to issue a strongly-worded appeal through the Roman Catholic clergy to discontinue the holding of wakes as the authorities are convinced that the holding of the Bogan wake in Thistle-street was the main cause of the spread of the disease. The Roman Catholic clergy, while deploring the free use of alcoholic drink at wakes among the poorer classes of the community, yet wish to bring out the fact that the watching of the dead among the middle classes is a very solemn function. Undoubtedly this is so and reverence for the dead is not a thing to be regarded lightly. Reverence for the dead, however, must give way to regard for the living and we cannot but think that the authorities of the Roman Catholic Church, a body which possesses in a very large degree the quality of common sense, will see the force of this statement. It must further be remembered that the Glasgow Parliamentary powers prohibit the holding of wakes over the body of any person who has died from infectious disease and that the occupiers of houses who permit such wakes to take place, as well as all persons knowingly attending such wakes, are liable to a penalty not exceeding 40*s*.

Professor Muir, the professor of pathology in the University of Glasgow, has laid before the Corporation of Glasgow a report upon the "Bacteriology and Pathology of the Cases of Suspected Plague in Belvidere Hospital." The report states that the bacillus found in the cases examined was proved to be both structurally and culturally identical with the bacillus of bubonic plague, while the pathogenic results of the plague bacillus were reproduced in animals by inoculation with the pure cultures obtained from the human subject.

Nine of the cases were examined bacteriologically, fluid being obtained by puncture of the affected glands. This fluid was examined both microscopically and by cultures. In four cases the bacillus was found and cultivated. In one case (Mrs. Malloy) a few degenerated plague bacilli were found, but no cultures were obtained. Dr. J. C. McClure had, however, two days previously to Professor Muir's examination obtained pure cultures, and, says Professor Muir, "the negative results obtained by me were in all probability due to the fact that the disease was in process of cure and that the bacilli were dying out." Four other cases were examined with negative results, but they were getting well. The post-mortem examination of the body of Patrick Malloy revealed that the lymphatic glands were almost universally affected and contained enormous numbers of bacilli. Professor Muir concludes by saying that up to the date of his report, Sept. 17th, five cases had been proved by bacteriological methods to have suffered from bubonic plague, and that one of the patients died from that disease.

We publish additional notes from Dr. J. Brownlee and Dr. J. Campbell McClure as to the

CLINICAL ASPECTS OF THE CASES OF PLAGUE.

During the last fortnight several points of interest in connexion with the present outbreak of plague have arisen. The persons originally admitted, with one exception are now out of danger. The exception is that of the patient Bogan, whose case was reported in THE LANCET of Sept. 15th, p. 827, and who is still suffering from secondary septic infection.

The chief points of interest are those dealing with treatment and administration. With regard to the former, we are able to report one very interesting case, showing the result of the use of Yersin's anti-plague serum. The case was suitable in many ways as a test of the value of the treatment. The patient came under care in the early stage of illness (within 30 hours of its inception). He was very acutely ill, resembling closely the patient formerly reported whose death occurred in the hospital. The seat of the bubo was in the axilla, a situation much more dangerous to life than that of the groin. Four hours after admission 40 cubic centimetres of the serum were injected, half intravenously and half subcutaneously, with the result that the temperature fell 4° F. in six hours and that there was in the like time a very marked diminution in the swelling round the bubo, while the tenderness was greatly reduced and in the course of the day passed almost completely away. Two days later the patient felt almost well and the pain in the bubo had disappeared.

The following is a report of the case of Charles M., aged 30 years, who was admitted to the Belvidere Hospital on Sept. 9th. Association with other cases has not been traced and therefore the period of incubation is unknown. The history of the illness obtained from his friends and afterwards verified by himself was to the effect that for about a week before his admission to the hospital he had suffered from moderately severe headache and slight malaise, but he continued at his work until the morning of Sept. 8th, when he had a rigor with increased severity of the headache and sickness, although vomiting was absent. By noon he was unconscious, and he was delirious all night and very violent.

On admission the patient was evidently extremely ill. His face was of an ashy colour with a more marked ring of pallor round the mouth. The conjunctivæ were slightly injected and the pupils were contracted in contrast to the more common dilatation observed in the other cases. The tongue was moist with a white fur on the dorsum, but not markedly injected. The temperature was 105·8° F., the pulse was 134, and the respirations were 40. The pulse was soft and compressible but full. There was no evidence that the patient was in the least conscious of his surroundings. When left alone he tossed restlessly in bed, but betrayed considerable anxiety in his face. On being handled he resisted so strongly that it was impossible for the nurses to wash him. This resistance was extremely marked if the palpation of his left axilla was attempted. In this situation a group of glands was found which were enlarged and acutely painful. (It is to be noted here that the movements of resistance made in opposition to the examination of this bubo resembled those of a person conscious of his actions and not the purposeless movements usually made in the delirium of typhus or enteric fever.) The only bubo found was in the left axilla; elsewhere, though the glands were slightly enlarged the enlargement was no more than is often met with in healthy persons. The other organs on examination showed nothing worthy of note. At 12 midnight 20 cubic centimetres of serum (Yersin's) were injected into one of the brachial veins and a like quantity into the subcutaneous tissue of the abdomen. This was done with considerable difficulty owing to the struggles of the patient. At the end of six hours it was seen that the patient had had a light sweat and that the temperature had fallen four degrees. The pulse-rate was reduced to 108 and the respirations had fallen to 34. The pain in the axilla was markedly lessened, and the surrounding œdema was much less. By the evening the glands could be palpated without undue resistance. A puncture for the purpose of completing the diagnosis was performed with the result that the clinical diagnosis was confirmed microscopically. By next day the cultures made at the same time showed typical growths of the bacillus pestis. On this

day the temperature was throughout 100° and the pulse ranged from 64 to 76. The patient felt quite well and desired to get up. On questioning him it was found that he remembered nothing from mid-day on Saturday (Sept. 8th) till the evening of Monday (the 10th) when he found himself in the hospital. Since the latter date the improvement has been constant with the exception of a rise of temperature to 101° on the evening of the 14th, associated with a slight recrudescence in tenderness of the glands in the left axilla which subsided on the next day. The pulse, however, is still weak and the heart-sounds are somewhat toneless. For the past 24 hours he has experienced some discomfort from pain in both knee-joints and in the left thigh, due in all probability to the serum injected on the 9th.

From the administrative point of view there can be no doubt that the mild cases of plague such as have been observed among those who had been in contact with the infected persons, either attending the "wakes" held over the dead bodies or otherwise, and who were subsequently under medical observation in the reception houses, are the most interesting. For it is evident that if these persons are even slightly infective their rigid isolation is a matter of the greatest importance to the community. Up to the present time we have received from the reception houses seven persons, of whom six seemed to be suffering from very slight attacks of plague, so slight that did they come under observation without a definite history of contact they would, apart from a bacteriological examination, be quite unrecognisable. The importance of the matter is further enhanced when it is considered that in these cases the buboes have been so small that to put a needle into the substance of the gland has been a most difficult matter. The general symptoms which these persons have exhibited have been as follows. In the onset there has been headache and malaise associated with sickness, while vomiting has been only occasional. The temperature has been only slightly raised—rarely above 100° F. and sometimes not above 99·6°; the pulse has been only slightly quickened and the rapidity of the respirations has not been markedly altered. The face has been heavy and drowsy-looking, the eyes have been injected, and the tongue has been furred. In fact, in general there has been an appearance of illness in the aspect of the patient which has been quite out of proportion to the severity of the symptoms. This look of illness usually persists for several days after the symptoms have subsided. The seat of the buboes in the seven cases has been twice in the left axilla, three times in the submaxillary glands, once in the anterior cervical chain, and once in the glands of the posterior triangle of the neck. The glands have been enlarged, with some peri-glandular infiltration and in one case reddening of the skin. Tenderness has always been present, though not so markedly as in the more severe cases of typical plague, and this tenderness has usually appeared on the second day of illness; it subsides after two or three days, though the swelling of the glands may not be wholly absent even after a fortnight. The clinical picture is fairly constant, though, as before remarked, the illness is not of a severity to be readily diagnosed unless with a definite history of plague contact.

We have up to the present been somewhat diffident in publishing reports of these cases because in only one case was it possible to make sure that our hypodermic needle had reached the gland, and in that instance the cultures gave no growth. But at the end of last week a wardmaid employed in the pavilion used for the isolation of the plague patients, and who had received a protective inoculation of 10 cubic centimetres of Yersin's serum exactly 10 days previously, developed an illness in all points exactly resembling that which we had before observed in the six patients received from the reception houses. It is only fair to state that owing to the fact that the serum arrived a week after the outbreak of plague amongst us the patient had been exposed to infection for that time without protective inoculation. In this case the buboes were in the posterior cervical region, so that their puncture was rendered more easy on account of the resistant deeper tissue which lay subjacent and did not involve the same risk as in the other cases where the glands affected lay over the main blood-vessels. From this case we have obtained typical cultures of the plague bacillus. We report in full this case and that of a boy admitted earlier in the outbreak as illustrative of the milder forms of the disease.

The patient, Archibald D., aged 18 years, was at the wake of Christina M. on the night of August 21st and was removed to the reception house on the day succeeding to the first discovery of plague in Glasgow. On the evening of August 28th he was seen by one of us on account of his having been taken ill. The patient was very drowsy, so much so that he manifested no reflex on touching the conjunctiva with the finger. There seemed to be no suspicion that this was due to alcohol. Headache, sickness, and vomiting had been marked and severe just before arrival, but had temporarily subsided. The temperature was normal, and the pulse was 70. All the glands of his body which were accessible to palpation were examined without anything abnormal being discovered. Next morning the patient was somewhat better, but he was kept in bed. In the afternoon a recurrence of the headache and vomiting took place. The submaxillary glands in the left side were complained of and found to be enlarged. The temperature was 99·6° F. He was straightway sent to hospital.

On admission the patient had that heavy and obfuscated look which has been already described in such cases, with injection of the conjunctivæ and slight dilatation of the pupils. The submaxillary glands were considerably enlarged and painful on palpation. Next morning the temperature was 99°, at which elevation it remained all day, but a consistent normal temperature was not maintained till the seventh day of the illness. The pulse on admission was 72 and had on the latter date declined in rate to 50, while the respiration rates were respectively 24 and 20.

The tenderness of the glands persisted for about three days, when it gradually subsided, but the swelling has not even at the date of writing (Sept. 18th) completely disappeared. The aspect of illness was more marked and lasted longer than would have been expected from the local conditions had the latter been due to ordinary causes. As possible causes of the condition which were definitely excluded may be mentioned caries of the teeth, faucial catarrh, and nose or ear mischief. Puncture of the gland was attempted only once, as it immediately overlay the deep vessels of the neck, and the culture proved sterile. It is, however, open to doubt whether the needle actually penetrated the substance of the gland.

H. R., aged 21 years, was a wardmaid in the wards at the Belvidere Hospital reserved for plague. As the patient was exposed continually to infection for the space of 15 days before developing the disease it is impossible to name the period of incubation. On Sept. 3rd, as a prophylactic measure, 10 cubic centimetres of Yersin's serum were injected subcutaneously. This produced none of the effects often resulting from it, such as urticaria or articular pains. On the 13th headache and pain in the back were complained of and nausea was also present, but there was no vomiting. The patient, however, felt very unwell. On the 14th the headache and malaise still continued and in addition tenderness and stiffness in the back of the neck were complained of. The eyes were slightly injected and the face was flushed and its expression heavy. The tongue was slightly furred but was otherwise normal. Neither diarrhœa nor constipation was present. The temperature was normal and the pulse showed nothing noteworthy. Behind the ears, in the posterior triangle of the neck, there was on each side a markedly enlarged lymphatic gland—that on the left side being of about the size of an almond and that on the right side of the size of a bean. Puncture was made into the gland of the left side and cover-glass films and cultures were made. These showed a bacillus morphologically indistinguishable from the bacillus pestis. By the 15th the tenderness of the glands had subsided and since that date they have been decreasing in size. The patient is now to all intents and purposes well.

In conclusion, we may once again remark that these persons probably belong to a class who represent a real danger to the community, for it cannot be supposed that because of the mildness of the attack the sufferers are not infective. All our experience of other infective diseases points to the conclusion that it is largely by means of such cases that the infection is scattered broadcast and the fact that in so many of the outbreaks of plague in the East there has existed for a considerable time prior to the serious epidemic an amount of slight illness of an apparently benign nature but which seemed afterwards to take on a malignant character ought to justify the most stringent observation of all persons in whom even the slightest suspicion of the presence of the malady can be assumed.

It must be noted that of the seven cases of benign plague

here discussed one is a case occurring in the hospital, while the other six have been among persons under medical observation in the reception houses of the city; that is, of the 100 persons removed for observation in the reception houses six persons have developed a form of the disease which would probably greatly endanger the safety of the community, but which, except for direct medical supervision of the sufferers, would most probably never have come to the cognisance of the health authorities.

As we go to press we learn by telegram that four "indirect contacts," a ward-cleaner who had been inoculated, and the wife of a collector of infected clothing have sickened.

A statement was made in our issue of Sept. 8th (p. 758) that the area described by Dr. Chalmers on the south side of the river and surrounding Thistle-street should be deemed infected. In reality the area was so deliminated as a special cleansing area, and not because it was regarded as a wholly infected area.

THE PLAGUE IN LONDON DURING THE REIGN OF ELIZABETH.

THE records of the Corporation of the City of London contain a number of letters which are of considerable interest in showing the state of the City during the visitation of the plague in the reign of Elizabeth.

On June 7th, 1580, the Lord Mayor wrote to the Lord Treasurer, Lord Burleigh, suggesting that, as the plague was at the time raging in Lisbon, he should be authorised to take precautions on the arrival of ships from that port and for the prevention of the spread of the infection in London. Lord Burleigh replied authorising him to prevent the lodging of merchants or seamen in the City and the suburbs, and to prevent a discharge of their goods until they had had some time for airing. He also suggested that there should be a conference of the officers of the port to suggest measures for the prevention of the infection.

Later in the same year the Lord Mayor wrote to the Mayor and Jurats of Rye, saying that as the plague was raging in that port he had received commands from the Queen's Council to stay all ships and merchandise from being brought to the City until they had been aired and he requested that the inhabitants of Rye might be charged not to come to the City or send goods by land so long as the plague remained there. The Lord Mayor also requested the Queen's Council to redress those things which were found to be dangerous in spreading the infection "and otherwise drawing God's wrath and plague upon the City," and enumerated amongst the exciting causes which were likely to affect this, "the erecting and frequenting of infamous houses out of (i.e., beyond) the liberties and jurisdiction of the City,"—and "the drawing of the people from the service of God and honest exercises to unchaste plays." Regulations which were drawn up for the purpose of staying the plague included amongst other things rules for the conduct of the inmates of places pretending exemption, restraining the building of small tenements, and the turning of great houses into small habitations by foreigners, the prevention of any increase in the number of buildings, especially about Charterhouse, Mile End, and St. Catherine's, and of "the pestering of exempt places with strangers and foreigners," and "the number of strangers in and about London of no Church," the haunting of plays beyond the liberties and the slaughter of cattle within or near the City.

In the month of September, 1581, their lordships also informed the City authorities that the Queen had been informed that the increase of the plague was due to the fact that the orders passed with respect to the persons infected were not being carried out. In consequence of this the Queen had been obliged to remove further off and to adjourn the law term, and if improvement did not take place the term, it was threatened, would be held elsewhere.

In April, 1582, the Lords of the Council gave orders to restrain burials in St. Paul's Cathedral because the interments were so shallow and the churchyard so crowded that scarcely any grave could be made without corpses being laid open. The number of parishes which were allowed to use St. Paul's churchyard was therefore reduced from 23 to 13.[1] The order, however, it was distinctly stated, was not intended to prevent any person of honour or worship being buried there, but only the pestering of the churchyard with whole parishes.

In October, 1582, the Queen issued orders prohibiting any merchants or other persons from the City whose houses had been infected from resorting to or sending to Hertford, Ware, Hoddesdon, or other places near Hertford, any sort of merchandise, food, or such like. At this time it appears that the law courts were sitting at Hertford.

In January, 1583, the Lord Mayor was required by the Council to see what inns and ale-houses had been infected during the two months before the issue of the order, and to have a list made of these places. The Lord Mayor accordingly had such a catalogue made and printed "for everyone that liked to buy and keep for his instruction." Lord Burleigh, in acknowledging the receipt of this catalogue, said that they had had a similar one from Westminster prepared by the Bailiff of that city. It was his opinion that the catalogue prepared by his lordship was somewhat too long and he desired the Lord Mayor to send for the Bailiff of Westminster and see how short a catalogue might be made to be published, and that this new list, when agreed on, should be sent to him for inspection.

On Jan. 15th the Lord Treasurer returned the corrected catalogue of the infected houses, in order that steps might be taken to increase its brevity.

By the month of April, 1583, the infection had much increased and the Queen commanded that infected houses should be shut up and provision made to feed sick persons and to prevent them from going out, that infected houses should be marked, and the streets thoroughly cleansed. Her Majesty expressed surprise that no hospital had been built outside the City to which infected people might be removed, although other cities of less great antiquity, fame, wealth, and reputation had provided themselves with such places. The Lord Mayor, in a letter written on May 3rd, complained of the great inconveniences caused by assemblies of the people at plays, bear-baiting, and profane spectacles at the theatre and such like places. These being beyond the jurisdiction of the City were not under the control of the Lord Mayor, who expressed a wish that the Lords of the Council might redress the danger. It does not appear, however, that this request was immediately granted.

[1] The total number of parishes in the city of London was 126.

ASYLUM REPORTS.

Cumberland and Westmoreland Asylum (Annual Report for 1899).—The average number of patients in the institution was 642 and comprised 335 men and 307 women. During the year 163 patients were admitted, 96 of these being men and 70 women. Of these, 35 in all—viz., 22 males and 13 females—were not first admissions. Dr. W. F. Farquharson, the medical superintendent, states in his report that of the patients admitted 148 were chargeable to the rates and 18 were private patients. "The admissions included two cases of congenital imbecility, five cases of epilepsy, seven cases of general paralysis, 10 patients who were over 70 years of age, and seven chronic cases transferred from other asylums. In 30 cases the attack had lasted more than a year before the patient was brought to the asylum. The great majority of the cases just enumerated were incurable." 35 of the patients admitted had previously been under treatment in the asylum and 23 of these had formerly been discharged recovered. "More than one-half of the patients admitted were in a feeble state of health; 15 of these were on admission in an extremely weak and exhausted state, and several of them died very shortly after being brought to the asylum. ..... 47 of the patients admitted had suicidal tendencies; 18 of these had actually attempted suicide before admission." In many of the cases admitted no definite cause of the attack could be ascertained. "Where such causes were known those of a physical nature predominated, as is usual." Hereditary predisposition to insanity was ascertained to exist in 51 cases, or 30·7 per cent., of the admissions, while intemperance in drink was the cause in 25 cases, or 15 per cent. During the year there were 91 patients discharged as recovered, the highest number of such discharges per annum in the history of the asylum and constituting 14 per cent. of the average number resident. 31 patients were discharged as relieved, and of these 24 were removed to the workhouse as no longer requiring asylum treatment. The number of deaths during the year

amounted to 44—viz., 24 men and 20 women, or 6 8 per cent. of the average number resident. Eight of the patients who died were over 70 years of age. One patient, aged 87 years, was admitted in a very weak state and died in three weeks; one patient was admitted dying from consumption and he only survived a week. All the causes of death were ascertained or verified by post-mortem examination. Of the deaths two were due to general paralysis of the insane, three to renal disease, five to senile decay, six to cardiac disease, and 17 to tuberculosis. Dr. Farquharson observes that "phthisis unfortunately is a disease very prevalent in asylums ..... its contagious nature is now clearly recognised, and large asylums afford great opportunities for the spread of the disease." Full stress is laid on the importance of the recommendation made at a recent meeting of the Medico-Psychological Association, that in connexion with each asylum there should be erected a sanatorium, built it may be of wood, to which all phthisical patients could be removed for treatment as far as possible on open-air principles. It is pointed out that at a date not far remote the further enlargement of the asylum will become necessary, and if in the first place a cheap sanatorium for phthisical patients were erected it would for a considerable time relieve the pressure on the accommodation in the present buildings. In the early part of the year one male patient and three female patients suffered from facial erysipelas. No casualties of any note occurred during the year with the exception of two cases of accidental fracture of bones, both in aged females. Much of the drainage of the asylum has been altered and rendered efficient. Owing to the fields used for irrigation by the asylum sewage having become sewage-logged, and complaints received of poisoning of cattle, it has been decided to adopt the system of the septic tank with subsequent filtration of the sewage through bacteria beds, a method known to be very satisfactory. The arrangements for dealing with an outbreak of fire have been improved upon, electric fire alarms have been installed throughout the building with an indicator in the entrance hall, new hose has been purchased, and periodic fire-drill of the attendants has been carried out.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On Enteric Fever in the Urban District of Coleford (Gloucestershire) and in the Surrounding Rural District of West Dean, by Dr. W. W. E. FLETCHER.[1]—Dr. Fletcher reports upon an outbreak of enteric fever in the small town of Coleford which, as he and Dr. Peter Buchanan, the medical officer of health of that place, had no difficulty in showing, was attributable to a particular milk service. In 1899 there occurred, after some months in which no enteric fever was reported in the district, a period of five weeks, from July 20th onward, in which no less than 74 persons were attacked in Coleford and its neighbourhood. Every one of the 19 Coleford houses invaded during this period were served with milk by a Mr. X., one, and by no means the principal, of the numerous vendors of milk in the place. And Mr. X.'s milk appears also to have been consumed by certain of the persons living in West Dean, just outside Coleford, who were attacked during the five weeks in question. From the end of this five weeks to December, 1899, a few scattered cases, principally secondary cases in houses invaded during the epidemic period, occurred in each month, but the disease did not again assume epidemic proportions. The cause of the milk becoming infectious is not quite certain; Dr. Buchanan saw reason to suspect that the milk-cans were washed with well water liable to privy contamination, but apparently no specific pollution which could account for the epidemic was traced to this well water. Dr. Fletcher also discovered that one of the milkers was suffering at the beginning of July from mild illness, not enough to keep him from work, which conceivably was enteric fever. On the latter assumption the dates and other circumstances were consistent with a theory that this milker had in some way or other infected the milk. As in most milk outbreaks, the incidence was chiefly on the children and on female adults. Out of the 74 cases 46 were females, and as many as 34 were under 15 years of age. The diagnosis of enteric fever was controlled in some instances by the serum test. This test (dilution not stated) in the case of the milker suspected of having caused the whole mischief had a "negative result."

On the Sanitary Circumstances and Administration of the Urban Districts of Bilston and Coseley and upon a Prevalence of Enteric Fever therein,[2] by Dr. L. W. DARRA MAIR.—Coseley and Bilston are two urban districts in the "Black Country" and are certainly no better in sanitary condition than their neighbours. In Dr. Mair's report, as we have often noticed in other official reports on these Staffordshire towns, the insanitary state of the surroundings of dwellings is strongly insisted on. The objectionable common yard at the back of dwellings, traversed by faulty gutters, unpaved, with large middens and associated privies which inevitably lead to excremental pollution of the soil, abound in both these places. Some of these middens have as large an area as from 60 to 80 square feet and are sunk four feet below the surface. Both districts in question contain a large number of dwellings for miners and artisans, put up haphazard several years ago without supervision by responsible authorities. As a result dilapidations are common; houses are frequently damp, having often been built without damp courses on clay soil; very frequently they have been erected on coal-pit débris or on other made ground, while in addition subsidences due to mining have caused, and still occasionally bring about, tilting and cracking of dwellings. To secure improvement of such houses and their surroundings is by no means an easy task for a local authority, particularly where the owners are keen in opposition and where, as so often is the case, the tenants in order to avoid increased rents support the owner in leaving things alone. Nevertheless, it is clear from this report that very much more courage should be shown by each of the district councils in question. It is not certain that they are taking sufficient trouble even now with new buildings, and thus they may be casting a heavy burden on their successors in future years. The facts which Dr. Mair gives as to the recent prevalence of typhoid fever illustrate the close connexion between the sundry unwholesome conditions of dwelling-houses and the endemic maintenance of this disease. A variety of useful recommendations are attached to the report. Among them one of the most pressing is obviously reorganisation and increase of the sanitary staff in both places. Dr. Mair indicates that each district suffers from lack of sufficient personal inspection by its medical officer of health, who in each instance is in private practice and is paid a comparatively small salary for his official work. It is a great pity that owing to anxiety to respect local prejudice all public authorities now seem to fight so shy of "combined districts." How much good might not be done by one capable health officer, sufficiently paid, and appointed, say, for half-a-dozen of the contiguous urban districts in the Black Country?

Memorandum on a Brief Visit to Pontypridd Urban District with Reference to a Fatal Prevalence of Diphtheria therein,[3] by Dr. L. W. DARRA MAIR.—Pontypridd urban district is of wide area—2560 acres—and comprises several large groups of population that have recently come to inhabit the mountainous districts about the rivers Rhondda and Taff in South Wales. Altogether its population is estimated at 38,900. For several years diphtheria has been widely prevalent throughout the entire district, while now and again its incidence has been exceptionally severe on communities in particular parts of it. In 1899 as many as 227 cases of diphtheria were notified, and from Jan. 1st to March 10th, 1900, there were no less than 108 notifications of this disease. Dr. Mair's memorandum, no doubt on account of the urgency of the case, deals wholly with preventive measures, which seem to have been very badly neglected at Pontypridd. Inquiry into the circumstances under which diphtheria has in late years so severely attacked certain of these valleys in South Wales is nevertheless much to be desired. A comprehensive investigation of the "epidemiological" sort into this subject might lead to valuable additions to our knowledge of the natural history of diphtheria.

[1] London: Eyre and Spottiswoode, East Harding-street; Edinburgh: John Menzies and Co.; Glasgow: Hodges, Figgis, and Co. Price 8d.

[2] Ibid., price 1s.

[3] Ibid.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6500 births and 4046 deaths were registered during the week ending Sept. 15th. The annual rate of mortality in these towns, which had been 21·7 and 19·6 per 1000 in the two preceding weeks, further declined last week to 18·2. In London the death-rate was 16·7 per 1000, while it averaged 19·1 in the 32 provincial towns. The lowest death-rates in these towns were 9·1 in Norwich, 10·7 in Cardiff, 11·1 in Bradford, and 11·4 in Halifax; the highest rates were 23·2 in Liverpool, 23·7 in Swansea, 25·4 in Manchester and in Preston, and 26·8 in Sheffield. The 4046 deaths in these towns included 879 which were referred to the principal zymotic diseases, against 1422 and 1143 in the two preceding weeks; of these 575 resulted from diarrhœa, 111 from whooping-cough, 73 from "fever" (principally enteric), 57 from diphtheria, 40 from measles, 22 from scarlet fever, and one from small-pox. The lowest zymotic death-rates last week occurred in Oldham, Huddersfield, Halifax, and Bradford; and the highest rates in Leicester, Manchester, Preston, and Hull. The greatest mortality from scarlet fever occurred in Sunderland; from whooping-cough in Croydon, Derby, and Gateshead; from "fever" in Portsmouth and Sunderland; and from diarrhœa in Leicester, Manchester, Preston, and Hull. The mortality from measles showed no marked excess in any of the 33 towns. The 57 deaths from diphtheria included 17 in London, nine in Leicester, six in Bristol, five in Salford, and four in Sheffield. One fatal case of small-pox was registered last week in Liverpool, but not one in any other of the 33 large towns; and only three small-pox patients were under treatment on Saturday last, Sept. 15th, in the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1753, against 1702 and 1736 on the two preceding Saturdays; 243 new cases were admitted during the week, against 140, 176, and 213 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 138 and 124 in the two preceding weeks, rose again last week to 161, and were 12 above the corrected average. The causes of 45, or 1·1 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Leicester, Salford, Bradford, Newcastle, and in 13 other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Blackburn, Halifax, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had declined from 17·9 to 17·5 per 1000 in the three preceding weeks, rose again to 18·9 during the week ending Sept. 15th, and showed an exces of 0·7 per 1000 over the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 15·2 in Leith and 15·8 in Dundee to 22·3 in Greenock and 32·0 in Perth. The 584 deaths in these towns included 54 which were referred to diarrhœa, 21 to whooping-cough, seven to scarlet fever, seven to "fever" (including one death from bubonic plague), six to diphtheria, two to measles, and one to small-pox. In all 98 deaths resulted from these principal zymotic diseases, against numbers decreasing from 108 to 83 in the four preceding weeks. These 98 deaths were equal to an annual rate of 3·2 per 1000, which was 0·7 below the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had been 54 and 42 in the two preceding weeks, rose again last week to 54, of which 21 occurred in Glasgow, 11 in Edinburgh, seven in Dundee, five in Leith, four in Aberdeen, and four in Greenock. The deaths from whooping-cough, which had been 25 and 21 in the two preceding weeks, were again 21 last week and included 16 in Glasgow and two in Greenock. The fatal cases of scarlet fever, which had been five, five, and four in the three preceding weeks, rose again last week to seven, of which six were registered in Glasgow. The deaths referred to different forms of "fever," which had declined from eight to four in the three preceding weeks, rose again last week to seven, of which two occurred in Paisley, two in Greenock, and one (the fatal case of bubonic plague), in Glasgow. The six deaths from diphtheria showed a slight increase over recent weekly numbers, and included two in Edinburgh and two in Aberdeen. The fatal case of small-pox was registered in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 58 and 79 in the two preceding weeks, declined again last week to 70, but slightly exceeded the number in the corresponding period of last year. The causes of 29, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 27·0, 26·7, and 22·2 per 1000 in the three preceding weeks, rose again to 24·8 during the week ending Sept. 15th. During the past four weeks the death-rate in the city has averaged 25·2 per 1000, the rate during the same period being 18·5 in London and 16·7 in Edinburgh. The 166 deaths belonging to Dublin registered during the week under notice were 17 in excess of the number in the preceding week, and included 44 which were referred to the principal zymotic diseases, against 40 and 26 in the two preceding weeks; of these 27 resulted from diarrhœa, seven from whooping-cough, seven from "fever" (principally enteric), two from diphtheria, one from scarlet fever, and not one either from small-pox or measles. These 44 deaths were equal to an annual rate of 6·6 per 1000, the zymotic death-rate during the same period being 3·2 in London and 2·8 in Edinburgh. The fatal cases of diarrhœa, which had been 32 and 20 in the two preceding weeks, rose again to 27 last week. The deaths from whooping-cough, which had been four and five in the two preceding weeks, further rose last week to seven. The seven deaths referred to different forms of "fever" showed a marked increase over recent weekly numbers. The 166 deaths in Dublin last week included 46 of infants under one year of age and 28 of persons aged upwards of 60 years; the seven deaths of infants exceeded the number recorded in the preceding week, while those of elderly persons showed a decline. Three inquest cases and four deaths from violence were registered, and the causes of eight, or nearly 5 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—

Staff Surgeon: E. P. Mourilyan to the *Severn*. Surgeons: W. J. Stitt to the *Australia* and E. H. McSherry has been appointed to the *Phœbe*.

Deputy Inspector-General of Hospitals and Fleets Henry Charles Woods, M.V.O., M.D., has been promoted to the rank of Inspector-General of Hospitals and Fleets in Her Majesty's Fleet.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Frederick Rowland Barker retires on retired pay.

Lieutenant-Colonel J. L. Peyton succeeds Lieutenant-Colonel Hughes as P.M.O., Salisbury Plain. Lieutenant-Colonel R. V. Ash, retired list, is appointed to the medical charge of the troops at Fleetwood.

INDIA AND THE INDIAN MEDICAL SERVICES.

Lieutenant-Colonel Thomas Stephenson Weir, Bombay Establishment, to be Colonel.

VOLUNTEER CORPS.

Artillery: 4th Lancashire: Surgeon-Lieutenant W. McClelland to be Surgeon-Captain. *Royal Engineers;* 1st Cheshire: Surgeon-Lieutenant W. Lawton to be Surgeon-Captain. *Rifle:* 4th (Perthshire) Volunteer Battalion the Black Watch (Royal Highlanders): Surgeon-Captain A. Thom resigns his commission. 2nd Volunteer Battalion the Sherwood Foresters (Derbyshire Regiment): Surgeon-Lieutenant-Colonel E. M. Wrench retires under paragraph 111 Volunteer Regulations, with permission to retain his rank and to wear the uniform of the battalion on retirement.

TRANSVAAL AND CHINA WAR NOTES.

The P. and O. steamer *China*, which arrived in Plymouth

on Sept. 9th, brought to the Royal Naval Hospital, Plymouth, 16 wounded sailors and marines from China. Most of the men formed part of Admiral Seymour's relief column, while the others took part in the fighting at Tientsin. The majority of the wounds were caused by Mauser and Mannlicher bullets. The invalids were conveyed to the Royal Naval Hospital, Plymouth.

Mr. J. Paul Bush, M.R.C.S., surgeon to the Bristol Royal Infirmary, and formerly in charge of the Princess Christian Hospital, arrived in Clifton on Sept. 13th from South Africa.

The *Tamar* arrived at Southampton on Sept. 15th from South Africa with 64 invalids under the command of Major Alexander, R.A.M.C. The men were sent to Netley Hospital.

Lieutenant Nickerson, R.A.M.C., who was taken prisoner at Venterburg on August 19th, has been released.

SOUTH AFRICAN WAR CASUALTIES.

The total losses (exclusive of sick and wounded men now in hospital in South Africa) since the beginning of the war amount to 39,785. Of the 27,937 sent home as invalids 173 have died, 740 have been discharged from the service as permanently unfit, and 920 are in hospital. Among the missing and prisoners, however, are probably included a large number of officers and men who have been liberated or have subsequently rejoined.

THE PREVENTION OF DISEASE IN THE FIELD.

We have called attention in another column to a letter from Dr. Leigh Canney recently published in the *Standard* on this subject, and have suggested that the matter should be taken up and considered by the War Office authorities, especially as Dr. Canney has been at the trouble to work out the calculations and details of a scheme showing how his proposals could be carried into effect. He deals mainly with the question in relation to the practicability of preventing such deplorable epidemics of typhoid fever and dysentery in armies as have recently occurred, for example, in South Africa, and he contends that the extent and prevalence of these diseases and probably of others of a kindred kind could be very materially diminished if not altogether prevented by the use of filtered or boiled water—giving preference for practical reasons to the latter method. He puts his calculations and estimates as follows:—

> An army of 50,000 men such as moved from the Modder to Paardeberg, and thence to Bloemfontein, would require for—(*a*) Filtration: 500 filters (and each filter would require a fresh candle daily). Total weight, 50 lb. × 500 = about 11 tons. Total cubic space, 1000 feet. Or (*b*) boiling: 500 combined heaters and stoves in separate wooden cases. Total weight. 100 lb. × 500 = 22 tons about. Total cubic space, 3000 feet. This army would require as fuel about 150 gallons of petroleum and 20 gallons of methylated spirit daily. The boiling system would abolish the need for some 4000 kettles, probably supplied at present to this army and weighing, probably, about 20 tons. The boiling system would, therefore, only add two tons + the weight of 150 gallons of petroleum and 20 gallons of spirit to the 500 tons of stores daily necessary for such an army. The boiling system or the filtration system would render the transport of vast typhoid and dysentery hospitals unnecessary. As in war, as practised at present without prevention, there are five times as many cases of disease (mostly preventable) as there are of wounds, the hospital equipment to be transported, under preventive measures, could be reduced, if not by four-fifths, at least very largely.

THE ROYAL ARMY MEDICAL CORPS ON SERVICE.

We may call our readers' attention to a communication published in the *Army and Navy Gazette* of Sept. 15th, from "A Staff Officer who does know." He bases his statements, which are strongly in vindication of the officers of the Royal Army Medical Corps, on the results of his own experience acquired in the field during the campaign in South Africa, and it is, we think, to be regretted that he did not append his name and rank to his letter which is a very good one and admirable in tone. Although we quite concur with him in thinking that it is essential for efficiency in war to have a strong corps of well-trained medical officers we are nevertheless of opinion that it will be also necessary to have in future a big reserve of civil surgeons. There is no reason why these civil surgeons should not receive some preliminary military training in time of peace, and then a comparatively short experience in the field would fit them for the discharge of their duties. There is room for the publication of a very useful manual of instruction as to the principles and methods of military and medical procedure in war.

DEATHS IN THE SERVICES.

Fleet-Surgeon Thomas M. Sibbald, R.N., of the battleship *Centurion*, flagship of Vice-Admiral Sir E. H. Seymour, K.C.B., on the China station. The admiral and other officers and men of the *Centurion* had returned to their ship last month after their march back from Peking, and on the day following their return Fleet-Surgeon Sibbald, who was suffering from fever, was found dead in his bed. The deceased was very popular in the service. His body was sent to Wei-hai-wei by the steamer *Shen King* and buried with full naval honours by the ship's company of the cruiser *Powerful*. Fleet-Surgeon T. M. Sibbald was one of the officers of the Royal Navy who were recommended by Captain B. H. McCalla, U.S.A. Navy Department, for a medal for acting concurrently with other officers in the relief of Peking.

THE RELIEF OF KUMASI.

An account of the relief of Kumasi published in the *Times* of Sept. 19th, and received through Reuter's Agency, gives a stirring picture of the sufferings of the besieged garrison. To add to these sufferings small-pox broke out in the fort. The cases had to be removed to a hut under the fort wall, and each day Dr. Hay, although extremely ill, clambered over the wall to visit these cases. In so doing he contracted fever for a second time. From the day of the escape of the Governor and his party until the fort was relieved a third of the garrison died from starvation.

Correspondence.

"Audi alteram partem."

"THE TREATMENT OF ACUTE ALCOHOLISM BY LARGE DOSES OF DIGITALIS."

To the Editors of THE LANCET.

SIRS,—In reference to your annotation in THE LANCET of Sept. 15th (p. 821) on the use of large doses of tincture of digitalis in the treatment of delirium tremens, I would like to mention that my father, the late John L. Paterson, M.D., of Bahia, Brazil, since 1877 treated all his cases, which were very numerous, with half-ounce doses of tincture of digitalis and never met with any evil result. He found that if the full dose were successfully administered the patient within half an hour fell into a deep sleep. In one case of very violent character the man, aged 37 years, slept for 16 hours straight off. He awoke with his head clear, but felt tired; this, however, soon passed off, for he got out of bed and went for a walk with his wife. The notes of the following case may prove interesting. A man, aged 50 years, much addicted to alcohol, was, after a heavy drinking bout, attacked with a very violent access of delirium. In the evening half an ounce of the tincture of digitalis was ordered; the medicine was fully administered and very shortly the patient vomited it. During the night he was so violent that, being a robust and powerful man, his friends were compelled to rope him down to the bed. On being visited at 9 o'clock in the morning it was discovered that the chemist had dispensed in error half an ounce of tincture of aconite. On being taxed with the mistake his only answer was, with a shrug of the shoulders, "Mistakes *will* occur." Having obtained half an ounce of the digitalis it was immediately given (9 A.M.). Within half an hour the patient was perfectly quiet, and gradually, hour by hour, became more and more himself and rational. His bonds, which had been so tightly tied that his wrists and ankles were swollen and cut, were loosed. He did not sleep, but lay with his eyes closed and complained piteously of the injuries to his hands and feet. At 10 P.M. he fell into a deep sleep and slept without intermission till the following morning, when he awoke with his head clear and free from any pain. His only trouble was the injury to his wrists and feet. There was no fever, but the pulse which before the digitalis had been full and normal in rate, became very small and fast (114). After a few days of weakness and loss of appetite he rapidly became well.

The smallness and rapidity of the pulse were noted in all cases treated with the digitalis. The case distinctly proves that, even when sleep does not occur immediately, the effect of the digitalis is to quiet the cerebral circulation. Another great advantage of the treatment is the fact that nearly all

the patients were able almost at once to return to their duties. I am, Sirs, yours faithfully,

Ascot, Sept. 17th, 1900. A. GORDON PATERSON, M.D. Edin.

"PROFESSIONAL ORGANISATIONS."

To the Editors of THE LANCET.

SIRS,—Dr. Ryley is anxious to know why I agree as to the desirability of a central representative body in the medical profession. Partly in order that questions like those between him and the other Yarmouth practitioners might be settled by what both sides should recognise as the collective voice of the profession. Dr. Ryley also presses me to explain what is the attitude of the Yarmouth District Committee towards London consultants. Our resolution, quoted by Dr. Ryley, confines itself to medical practitioners in the town and neighbourhood, and the district committee has not gone beyond this. Having answered Dr. Ryley's questions may I ask one in turn?

So far Dr. Ryley has given no indication of his present views as to the conduct of the gentlemen with whom he desires us to consult. He will, I suppose, admit that these medical men accepted their present appointments knowing that there was a dispute pending between the united local profession on the one hand and a section of the public on the other, and that their acceptance was an act of hostility to the profession; that the advertisement of the appointments appeared only in the lay press, the medical press refusing unanimously to insert them; that the appointments themselves were at a fixed salary for attendance on an unduly large number of patients, all profit from their medical work going to the lay body; that the management was entirely in the hands of a lay committee; and that there was no restriction as to the class of patients to be attended. Considering Dr. Ryley's present attitude I think it not unreasonable to ask whether he esteems the action of these gentlemen deserving of professional reprobation, and if so how he thinks that reprobation should be expressed? I trust that Dr. Ryley's many professional and other engagements will not prevent his replying to this important question, especially as his answer need not be long.

As to "common humanity," Dr. Ryley's heroics are out of place. Common humanity is not at stake in the difference between himself and his Yarmouth fellow practitioners, and therefore he is not yet called upon to brave "ostracism or boycotting" in its defence. Our correspondence with him shows that the difference is not on the point of humanity, but on quite other issues. His demands were (*a*) that our attitude towards the institute surgeons should be referred to some "central representative authority," and (*b*) that that attitude should be modified in certain ways, which might, perhaps, be more agreeable to those surgeons but would make little practical difference to their patients. (*a*) fell through for lack of the mutually desired "central representative authority." The General Medical Council is restricted, as it has always held, by its statutory powers to taking cognisance of offences alleged to be "infamous in a professional respect," and Dr. Ryley's contrition for his former conduct has not yet led him to ask that such censure be passed upon it. The councils of the various medical corporations are only authoritative at most as to their own diplomates and are not strikingly representative of those. Of the British Medical Association Dr. Ryley is not a member, and, we believe, declines to recognise its ethical committee as either representative or authoritative. As to (*b*), we are, and have always been, prepared to give immediate help if called upon to the institute surgeons (or conversely, as Dr. Ryley points out, to accept it if necessary from them) in cases of sudden and grave emergency, or to treat their patients, gratuitously if necessary, who desire our advice. So much, we consider, is required by "common humanity," and suffices to meet its demands. Dr. Ryley desires us further to consult with the surgeon, but will not consent to waive the fee; thus the issue is not one of humanity to the *patient*, but of degree of recognition of the *surgeon* and of a possible small pecuniary sacrifice.

This, of course, is an *ex parte* statement whose fairness can be tested only by reference to the correspondence now in your hands. Should you, Sirs, afford space to publish that correspondence, your readers can judge for themselves; otherwise we leave it to you to say whether we have fairly stated the points involved. And if these be the points then we appeal with confidence to our medical brethren to say whether we or Dr. Ryley have shown a greater regard for "common humanity" and for the honour and interests of our profession. I am, Sirs, yours faithfully,

Great Yarmouth, Sept. 18th, 1900. W. E. WYLLYS.

*** We hope to publish an article dealing with this matter in our issue of next week.—ED. L.

"ARE COPPER SALTS POISONOUS?"

To the Editors of THE LANCET.

SIRS,—Under the above heading there is an annotation in THE LANCET of Sept. 15th (p. 821) in which I am glad to find that the opinion I expressed in reference to the sale of so-called "greened" vegetables in a paper on the Action of Copper on the Human Body, read before the British Association (Chemical Section), has your support. When you say, "We do not object to the plan of preserving the colour of peas by copper" you expressly what I endeavoured to prove in a brief part of my paper. For though most of your criticism is directed to this point, it was a very minor one in my paper. Your objection to the purchaser not being notified that the purchased article is coppered I hardly thought came within the consideration of "the action of copper"—a question whose investigation was large enough to occupy me constantly since the beginning of this year. In my judgment, if so-called "greened" vegetables were poisonous or injurious notification as to their being coppered would not justify their sale—it should be prohibited. And with this, too, I have no doubt you are in agreement, because I anticipate you would not approve of the sale of poisonous or injurious food and also because you illustrate your objection by the case of meat cooked in a gas-oven being improperly represented as being roasted. When we are in agreement on the really important point it is undesirable to occupy your space by discussing minor points, where difference is mainly due to the necessary briefness of the abstract brought to your notice. But I would like to refer to an error in your remarks when you state that my paper was on the subject given in the above heading. Of course I never questioned that there are poisonous salts of copper. Some of them are referred to in the published abstract of my paper. The correct title of my paper I have given above, and but brief reference was made to the subject of coppered vegetables. My researches prove that salts of copper are being constantly absorbed into the blood and excreted by persons engaged in working copper ore and alloys of the metal, while they are unconscious of the fact and continue in perfect health, and that consequently they are not "poisoned"; further that copper salts ingested with food, or alone, lead to absorption into the blood and excretion of copper salts without the slightest ill effect.

I am, Sirs, yours faithfully,

Bradford, Sept. 15th, 1900. THOMAS WHITESIDE HIME.

"PROFESSOR LUSTIG'S PLAGUE SERUM."

To the Editors of THE LANCET.

SIRS,—In discussing a scientific subject it is unnecessary to reply to the personal attacks made upon me by Dr. Mayr in THE LANCET of August 11th, p. 461. Such attacks in debate may be common on the continent of Europe, but Englishmen do not consider that they advance an argument. I need only remark that it seems an extraordinary thing that a correspondent cannot criticise reports and reputed results of a method of treatment without ignorance of the subject or wilful misleading being put forward to explain his opposition.

I have argued the value of the experiments referred to entirely upon their own merits and I still hold that even if alternate cases have been regularly taken with others as controls *it is not satisfactory evidence when moribund and other cases have been excluded.* In the later experiments we want to know how many and what proportion of moribund and convalescent cases were taken out from each series. The later results of this method of treatment may appear to the physicians concerned very satisfactory, but unless their system of experiment is above suspicion their conclusions cannot be convincing. My opponents and I are at issue upon the reading of the statistics

and upon the basis adopted for the construction of those statistics. Supplementary to what I have previously reported I should like to point out from the figures contained in Dr. Mayr's own letter that when "out-and-out" selection of cases was adopted the recovery-rate was 33·2 per cent., whereas when the patients were said *not* to be selected (although all the time moribund and convalescent cases were excluded) the recovery-rate was almost identical—33·8 per cent. Again, the controls are credited with only 21·3 per cent. recoveries, but this is the recovery-rate or thereabouts of all cases admitted to hospital without the exclusion of any cases whatever. If the excluded cases have been subsequently added to each series before working out the percentages the figures become intelligible, but this is not stated in any of the reports and we do not know whether the excluded cases were approximately equal in the two series. In a previous letter from Dr. Choksy he says: "The exclusion of moribunds and convalescents did not tell in favour of the serum," and the inference therefore is that these cases were not included. If that be so the whole series of figures are worthless, because if you deduct the moribunds from a given number of admissions the natural recovery-rate will be better than under the serum treatment. When moribunds or convalescents are excluded there must necessarily be the error of personal opinion as to the condition of the patient. If, therefore, Dr. Mayr or Dr. Choksy or Lieutenant-Colonel Wilkins can show a series of cases in which every admission has been included and in which the serum cases show better results than the others, or a series of cases in which the excluded moribund and other cases on the two sides are approximately equal, and still the results are satisfactory, I shall be glad to accept their conclusions.

At present I am not satisfied that the conditions thereby involved have been carried out and I am therefore not disposed to accept figures calculated on a faulty basis. With regard to Lieutenant-Colonel Wilkins's short letter I claim that it is not fair fighting to speak of "the inaccuracies which this (my) article contains" without stating what those reputed errors are. Lieutenant-Colonel Wilkins shelters himself under Dr. Mayr's letter, in which, however, there is not a single argument advanced against my reasoning but merely a statement of reputed results at the Arthur-road Hospital and various uncomplimentary remarks about myself. I am, Sirs, yours faithfully,

YOUR SPECIAL CORRESPONDENT.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Depletion of Field Hospitals in India and Arrangements for China.—The "Gwalior" Hospital Ship.—The Shorthandedness of the Indian Medical Service.—The Cholera and Plague Epidemics.—The Increased Mortality in the Cities of Bombay and Calcutta.—Fresh Plague Regulations at Poona.

THE Secretary of State has been informed that the medical arrangements made in India only provide for the requirements of the force sent from India and do not include the requirements of troops at China stations before the commencement of hostilities. As the supply of field hospitals sent to China is extremely liberal and as the greater part of the troops have gone from India the hospital accommodation will probably meet all requirements. In the meantime, however, the reserves of hospital equipment in India have been depleted and the India Office has therefore been asked to despatch immediately to India complete equipment for the four general hospitals of 500 beds each required for the China force. All the hospitals have been fully equipped with comforts, surgical appliances, and mosquito nets. Thirty dandies with 180 bearers to each field hospital have been despatched. Water transport is largely relied on, but nine tongas have gone and more will follow when the roads are reported fit. One field medical store has been sent to the north and another to the south of China. The following arrangements have been made. For Europeans, strength about 1000: for officers, 10 beds; for men, 200 beds. In field and general hospitals also 175 beds. In the hospital ship *Maine*, for natives, strength about 30,000 combatants and non-combatants, 1300 beds; in native hospital ships containing about 365 beds, and for reception at Calcutta General Hospital, 500 beds. The *personnel* sent or going to China are 135 medical officers, 25 assistant surgeons, and 224 hospital assistants; five nurses are attached to the general hospital.

The Maharajah of Gwalior's hospital ship *Gwalior* is a fine vessel of 4200 tons register. Her main deck will provide accommodation for 160 beds. In the orlop deck will be the hospital with accommodation for dressers and ward orderlies. There will be six special swinging beds for fracture cases. Convalescents will be accommodated on the saloon deck. There are three medical officers' cabins which are supplied with electric bells so that they can be communicated with at any time both day and night. A disinfecting-room, mortuary, and latrines for the staff are provided on the upper deck forward. A special machine for disinfecting clothes similar to the one used on the *Carthage* will arrive shortly. On the poop will be a completely isolated infectious ward with 16 beds. Roentgen ray apparatus will be taken. There is a complete service for drinking-water for all castes. Lieutenant-Colonel A. M. Crofts, I.M.S., will be in principal medical charge with Captain M. Moore, I.M.S., and another officer. It is stated that His Highness the Maharajah is prepared to spend £100,000 upon this undertaking.

In view of the drain upon the medical service the Government of India have issued orders recalling Indian Medical Service officers on leave on private affairs, and the Secretary of State has been asked to inquire whether retired medical officers will volunteer for service in India. The Government have also sanctioned a proposal for the re-engagement of pensioned military assistant surgeons on the same pay as they used to draw before. Major J. T. W. Leslie, I.M.S., Major F. P. Maynard, I.M.S., and Captain G. Smith, who are now engaged on special scientific work at home, will return to India.

A further considerable increase in the plague mortality throughout India is reported, the total number of deaths in the past week having risen to 629 from 449 for the previous week. The chief rise is in Mysore State (281), Mysore city returning 188 and Bangalore city 21. In Bombay city the mortality increased from 51 to 75, and in the province from 64 to 160. In Calcutta there were 84 deaths and in the Bengal districts 18. The remainder of India continues free.

While cholera continues to be very prevalent in Bombay city and a few other places it is satisfactory to find that among the troops it is decreasing. The total numbers since August 3rd are 271 cases with 165 deaths. There have been over 400 deaths from cholera during the past week in Bombay city and over 100 are reported in Kashmir. In Calcutta there were only nine.

The general mortality in Bombay city has decreased from 2203 last week (rate 136·87 per 1000) to 1624 this week. Of this number 64 are returned as due to plague and 408 as due to cholera. These figures still leave about 400 deaths to be accounted for. The sudden rise was doubtless due to cholera and the deaths occurred in all parts of the city. There is said to be at the present time a large ill-fed mendicant population in consequence of the closing of several mills and of the famine. The infantile mortality amongst the poorest classes is also described as terrible, and it is said that on one day 60 infants died. The returns show a sudden increase of deaths from phthisis. Usually about from 80 to 90 deaths a week, they rose to 161 and then to 210. With respiratory diseases the figures under this head trebled the average and in a single week 500 deaths were recorded from this class of disease alone, the normal general mortality of Bombay being from 500 to 600 deaths a week.

The general mortality in Calcutta is also higher than usual. With an average of about 30 per 1000 it has increased from 37·2 per 1000 for the week ending August 4th to a rate of 42·2 per 1000 this week, and seems likely to go higher still. There is an increase of nearly 50 per cent. over the normal. Part of this is explained by extra deaths from cholera and small-pox and from plague and suspected cases. There is a residuum of about 200 deaths during the past week unaccounted for.

Fresh plague regulations of a very modified form have been recently promulgated at Poona. They are apparently the result of the recent resolution of the Government of India on the report of the Plague Commission. Many of the old orders have been omitted. There will be disinfection of houses in which plague has been found to exist and also of adjoining houses. Free inoculation will be available at convenient hours and facilities will be given for inoculation at

home. This is about all. The minimum of interference has at length been arrived at in Poona, but this minimum has long been attained in Calcutta. There is no evidence to show that the avoidance of active measures in Calcutta contributed to the outbreaks. On the contrary Calcutta has suffered much less than other places have suffered.

August 30th.

THE FIRST INTERNATIONAL CONGRESS OF THE MANUFACTURERS OF PHARMACEUTICAL SPECIALITIES.

(FROM OUR SPECIAL CORRESPONDENT.)

RAPID GROWTH OF THE TRADE IN "MEDICAL SPECIALITIES."

THE rapid development of the trade in pharmaceutical specialities has occasioned much recrimination and many ardent controversies. The special drug, the secret remedy, the nostrum were strongly denounced at the International Congress of Deontology or Medical Ethics. In spite of the hostility of the medical profession and the dispensing chemists the pharmaceutical speciality has become an important and separate branch of trade and has been increasing by leaps and bounds. So great is this progress that the manufacturers of these specialities have been able to hold an international congress which met at the Palace of Congresses on Sept. 2nd and 3rd and had no less than 468 members. Though 371 out of these were French manufacturers and druggists there were a great many foreign nations represented, but they sent only few delegates. As is often the case, the smallest countries had the greatest number of representatives. Thus while Great Britain had only four, Germany five, Austria three, the United States two, and Russia one, Belgium had 10, Italy 11, Cuba eight, Bolivia four, Brazil three, Egypt four, Holland three, Mexico four, Switzerland four, Bulgaria, Algeria, Spain, Hayti, and Peru two each, and Chili, Colombia, Greece, Guatemala, Sweden, Tunis, Portugal, Turkey, and Uruguay one each. But what are more remarkable than these figures are the statistics given of the exhibitors of pharmaceutical specialities. At the Universal Exhibition of 1855 there were only five such exhibitors. In 1867 their number had increased to 23, and in 1878 to 29, and they were all French. It was said in the course of the debate that this branch of the trade existed 50 years ago, but that it did not really develop and become important till within the last 25 years. Thus it is that at the Universal Exhibition of 1889 we find that there were no less than 154 exhibitors of pharmaceutical specialities, and these were no longer only French firms but 87 of them came from other countries. At the present Universal Exhibition there are 399 exhibitors of pharmaceutical specialities, and of these 138 are foreign and colonial. These figures are sufficiently eloquent. In the face of such facts the necessity of regulating this trade in a satisfactory manner is recognised by practical men. It was to attain this end that the Congress in question was convoked.

An influential organising committee had been formed. Its president, who also presided over the Congress, was M. Victor Fumouze, M.D., Pharmacist of the First Class, Honorary President of the Union of Manufacturers for the Protection of Industrial Property, and member of the firm of Fumouze Brothers. It was Dr. Fumouze who on behalf of the French Chambers of Commerce received and entertained the delegates of the British Chamber of Commerce when they assembled last week in Paris. The secretary of the committee was M. M. Leprince, M.D., Pharmacist of the First Class, Laureate of the Faculty of Medicine, of the upper School of Pharmacy and of the Hospitals of Paris, Member of the Committee for Class 54, Group IX. of the Exhibition. The other members of the committee also held highly honourable positions. The majority of the manufacturers who were members of the Congress deal exclusively with the medical profession, advertise only in the medical journals, and do not appeal to the general public. Still some of the members of the Congress belonged to the other class which does advertise in the lay press and caters for the general public.

M. A. GIRARD read the first report submitted to the Congress which dealt with the general conditions of the trade. He remarked that English specialities were exported because Englishmen when abroad required these medicaments, but that French and German specialities were sent abroad because of the high reputation which they enjoyed. Practically France, Germany, and England were the only countries that did a large export trade. It was difficult to ascertain the amount of these exports as the drugs were not entered by the customs under the heading of "specialities." Still, it was easy to see that the largest purchasers of French remedies were the States of Southern America. In Europe the largest quantities of French pharmaceutical specialities were sold in England, Belgium, and Spain. The French imported more from England than from all the other countries put together. The report then reviewed the trade of a great number of countries and when it had been read a short discussion ensued which concluded with the adoption of the following motion:—

That in each country administrative or legal restrictions brought to bear on the importation and sale of pharmaceutical specialities should have no other object than that of protecting public health. That the common law should apply to these products in regard to legal, administrative, or fiscal restrictions, press censorship, stamp duties, special taxation, &c.

ABOLITION OF SECRET REMEDIES.

At the second or afternoon sitting M. AUGENDRE read a lengthy report on the law in different countries with regard to secret remedies, &c. That of England was summed up as "perfect freedom for those who possessed a diploma." But while there were regulations with regard to poisons there was no direct interference with pharmaceutical specialities, and yet trade-marks were protected throughout the United Kingdom. The most interesting passage of the report, however, related to Belgium, because it analysed a new project of law which was not only likely to be adopted in that country, but is very similar to the project which M. Astier had introduced in the French Legislature. Article 25 of this project of law stipulates that all drugs must be of good quality and Article 27 that druggists will be held responsible not only for what they have sold but for what they keep in stock for sale. Article 28 introduces a most important and novel stipulation. It enacts that medicaments prepared for private persons at the request of the purchaser or in virtue of a medical prescription shall bear a label mentioning in very clearly written characters its qualitative composition or the passage from the Pharmacopœia or the formula which has been employed. If such medicaments contain a toxic substance the quantity used must likewise be clearly indicated on the label, in the pamphlets, and in the prospectuses relating to the same. The Government is to prepare a list of toxic substances to which the latter clause shall apply. The dispensing chemist whether he sells a manufactured speciality or not is alone held responsible. If such speciality contains a toxic substance the druggist may only sell it when the purchaser presents a medical prescription. In France the pharmacists are governed by the law of the 21st Germinal Year XI., and by no less than 32 different ordinances, decrees, &c., issued since that date. But on June 12th last M. Astier introduced in the Chamber of Deputies a Bill which, as already observed, is very similar to the Belgian project of law. In the preamble to his Bill M. Astier says that above all the dispensing chemist must remain a man of science on whose probity and devotion the public can rely. But he goes on to explain that the science of chemistry as applied to therapeutics has made gigantic progress. Formerly only a few substances were employed, and these could all be manipulated in the druggist's shop. Now many of them have to be made wholesale in large factories, whence they are purchased by the dispensing chemist. The entire position has changed and the law must also be altered. Consequently M. Augendre concluded his lengthy report by proposing resolutions to the effect that every effort should be made to assimilate the regulations governing the importation of pharmaceutical specialities into different countries, that the trade-mark of the manufacturers should be protected from imitations, and that the custom duties imposed should not exceed 10 per cent. of the value of the article. These suggestions were adopted after some discussion. The general tone of the debate showed that the members of the Congress were mostly in favour of reciprocity and were anxious to see pharmaceutical specialities figure as distinct objects of exportation and importation in all future treaties of commerce.

THE INVENTOR AND HIS MARK.

The second day of the Congress was mainly devoted to the

reading and discussion of M. LÉON COMAR'S report on the protection of trade-marks. This paper was a masterly summary of this somewhat intricate question, in which many interests conflict. As a manufacturer the druggist incurs the same risks, pays the same taxes as other manufacturers, and therefore should have the right to select a trade-mark. But, unlike other manufacturers, he must pass examinations, possess diplomas, and is subjected to special interferences of the law. In France there is, further, a tendency to deny his right to a trade-mark on the ground that this may deprive the public of a useful remedy, and therefore the druggist is not to enjoy any advantage from a discovery or invention which he may make. Most countries, however, do recognise that the manufacturer has the right to preserve the distinctive name by which his particular product may be recognised. But the giving of such a name is a matter of great difficulty. The name of the principal ingredient cannot be used because it is a word that is the common property of all. On the other hand medical men very naturally insist that the name shall indicate what is the principal ingredient, and it is difficult to reconcile these two exigencies. It is consequently necessary to invent a word that is not the real word and yet that shall indirectly indicate the nature of the substance. M. Comar brought forward a series of propositions demanding that trade-marks or manufacturers' marks should be recognised and protected in all countries, that the name of the manufacturer might be considered as a trade mark, that such trade-mark might include the indispensable descriptive word, such as "syrup," "powder," "pill," &c., and that all nations should adopt similar patent laws. Most countries allow processes of manufacture to be patented, but will not give patents for chemical, pharmaceutical, or alimentary products. Great Britain, Belgium, Brazil, Mexico, and Guatemala alone protect both the process and the product.

APPROBATION FROM THE ITALIAN GOVERNMENT.

M. PELLETIER, who was delegated by the French Government to help in the negotiation of various treaties of commerce, complimented M. Comar on his lucid exposition of the situation. Every other form of human art and industry had subdivided itself into specialities and druggists were bound to follow this law. By devoting themselves to one particular branch they would produce better drugs, and this was to the benefit of the sick and to that of the medical practitioners who would be better able to rely on the effect of their prescriptions. The manufacturer on his side was entitled to a legitimate profit when he effected a real improvement. But such protection was denied to the manufacturers in France by the decree of 1844 on the ground that nothing must be done to encourage charlatanism. To patent a drug would seem like endorsing a charlatan with Government approbation. But since then economic conditions had greatly changed. Industry was the transformation of raw materials into something that could be sold to the public. This was what the druggist did, and he paid taxes and might become bankrupt like other manufacturers. Even a patent might be granted, for it placed the secret into the public domain and generally stimulated industry and progress. The patentee's financial advantage did not last long. But it was said that by granting a patent a marvellous remedy might be kept back and delay occur before it became accessible at a cheap rate. To meet such comparatively rare cases the State might retain the right to purchase patents for the public good.

M. MAILLORD DE MARAFY regretted the present dispute between the dispensing pharmacists and the manufacturing pharmacists. Their trade interests might be antagonistic, but not so their general human interests. Resolutions of a congress only influenced governments in so far as they were supported by good arguments. In all branches of trade the same product bore the same name. Why should not the chemist, who had to incur an expensive education, enjoy the same privilege as the grocer or biscuit-maker? Yet in France a law to this effect had been under discussion for 20 years and had not yet been passed. He then quoted an extract from a Ministerial circular from the Italian Government dated March 8th, 1884, which stated that: "No one contests the advantages which pharmaceutical specialties may realise. There is the purity of the substances employed, their rational treatment so as to ensure the therapeutic action of the principal ingredient to modify, if need be, some secondary effect which may be unfavourable from the curative point of view. Then there is the care taken so that the preparation shall be perfect and as far as possible not liable to deterioration, and also to avoid chemical incompatibilities that might render useless the action of the medicament. Also these preparations sometimes succeed in conferring to the remedy a flavour and appearance that are pleasing to the patients." M. de Marafy remarked that it was often said that testimonials in favour of specialities were only obtained by bribery, but he thought that this testimonial given by the Italian Government could scarcely be attributed to any such corrupt origin.

The PRESIDENT (Dr. Fumouze) remarked that the dispensing chemists at their congress had carried a motion to the effect that no commercial scientific denomination should be allowed to constitute a trade-mark. He agreed that the manufacturers of special remedies should inscribe on their labels the dose of the active principle employed, but they ought not to be compelled to describe all the component parts of the preparation. To give the complete prescription would enable anyone to produce identically the same remedy. This and the denial of the trade-mark would destroy the business of the pharmaceutical specialists. Also whatever the details to be given on the labels the rule should be the same for all countries, otherwise inextricable confusion would arise. They were ready to give all information necessary for medical purposes but not such details as would render imitation easy.

THE GENUINE AND THE QUACK REMEDY.

M. ASTIER explained his action in Parliament. Though himself a specialist he had altered Article 5 of the Bill so as to safeguard the interests of the public. One was rarely gifted with all reason and no error. It must be recognised that pharmacists were a privileged class. The industry of manufacturing and dispensing drugs was monopolised by those who held the diploma. Such monopoly was against the principle of freedom to trade conferred by the great Revolution; therefore the nation had in exchange for the privilege granted the right to impose special burdens and responsibilities. There was a weak side in the claims of the specialists. When a specialist proposed to make hair grow and corns drop off with one and the same substance it was not surprising if the public felt some doubts in granting all the demands of the specialists. When he proposed in the Bill that the dose of the active principles should be stated he wanted to check the vulgar parasites who imitated genuine and useful remedies which had been produced after much study and expense. He had no care for the mountebank hangers-on to what should be a highly scientific and respectable trade. He also appreciated the objections of the medical profession. If, for instance, a medical practitioner on being called in found the patient in a condition of collapse and was told that he had been taking some patent syrup, how was it possible to give an antidote or to alter suitably the treatment unless there were means of knowing, and that immediately, what the syrup in question contained? This should be inscribed on the label.

M. BERNEVILLE, a Belgian delegate, agreed that the active principle of the medicament should be stated on the label. It should be known what was being taken and in what doses.

This principle as defined by the Bill before the Belgium Parliament was formulated as a resolution and adopted by the Congress. The matter, therefore, stands thus. The Congress repudiates the idea of secret remedies; some detail in the mode of manufacture or of putting together the preparation might be kept from the public but the active principle must be disclosed. No one must prescribe or take medicine in ignorance of its active potentialities. Knowing this much any dispensing chemist might be asked to prepare something similar. If he did this and the result was as good, and especially if the medicament were cheaper, then the speciality would die a natural death; in fact, it would have been demonstrated that it did not deserve to be called a speciality. On the other hand, if it was something that the ordinary chemist could not readily imitate then it deserved to stand because of its special or exceptional merits. This principle if acted upon would certainly be the death-knell of many so-called specialities, but it would purify an important and ever-increasing trade, would silence the accusation now so freely made of charlatanism or quackery, and would be an encouragment to genuine inventions, discoveries, or improvements. Such was the upshot of this somewhat remarkable Congress and of the first international meeting of pharmaceutical specialists ever held.

Paris, Sept. 10th.

THE PRESIDENCY GENERAL HOSPITAL, CALCUTTA.

NEW BLOCK FOR MEN.

(FROM A CORRESPONDENT.)

THIS new hospital, about which I propose now to give only a preliminary notice, is not yet open for the reception of patients. The building consists of a central block which will be chiefly taken up by administrative offices and private wards with a large rectangular block on each side. These contain the six main wards, two on each floor, and will accommodate 24 patients in each ward. There are at the inner end of the ward the ward offices and at the outer end of the building are the lavatories. The building has three storeys and is superimposed on what is practically a series of pillars, giving a free air space eight feet in height below the ground floor. The aspect is north and south—the building running east and west—because the prevailing winds are from the south. A wide verandah runs round each floor from one end of each block to the other. The roof is flat and affords a most excellent promenade extending over the whole building. The main wards are 108 feet long by 26 feet wide and are 16 feet six inches from floor to ceiling. As they are arranged to accommodate 24 beds this gives 116 superficial square feet for each patient and 1914 cubic feet capacity. There is a doorway between each bed so that the circulation of air can be almost as free as out of doors. The floor is cemented and the wall is tiled five feet up. There are no ledges for dust to collect on. The ward closets and lavatories are isolated from the main block and occupy the small wings at the east and west extremities of the building. The medical attendant's room and the nurse's room are arranged to overlook each ward. Besides the verandah there is a day room for the patients of each ward. There are also two separation wards to each main ward, which are placed in the block containing the ward officer. The central block contains six private wards on each storey. The operating room is beautifully situated over the porch. It faces north and is open on three sides. There is an anæsthetic room leading into it, also a splint and bandage room close by.

The design of the building is excellent and is so arranged as to adopt all the latest improvements. The architecture is plain, but the building taken as a whole is imposing. There have yet to be built nurses' quarters and kitchen quarters as well as quarters for infectious cases. These will all be isolated from the main building and also from each other. The lighting will, of course, be by electricity, which will also be the motive power for the punkahs. At some future time it is proposed to build a similar structure for women, this one being intended at present solely for men. When the hospital is furnished and ready for occupation I hope to send you a second notice referring to details, as I have here merely attempted to describe its main features.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Musical Festival.

THE Birmingham musical festival is a triennial occurrence which will fall this year in October. Much interest is attached to the performances since the proceeds form an important element in the funds of the General Hospital. Formerly the festival was held in August; on the last two occasions it was changed to October without any diminution in the receipts. On the present occasion the programme which has been issued gives evidence of a very full and complete list of works, and bids fair to uphold the reputation which the festival has always enjoyed. The first musical festival in aid of the hospital was held in 1768, when a sum of £299 was realised; for the last festival, in 1897, £5117 was the amount of the net return. In addition to this the valuable organ in the town hall, valued at upwards of £5000, is the property of the General Hospital, as is also an extensive musical library. It would be needless to mention the musical works to which the festival owes its celebrity. The *Elijah* was first written for this festival, and its performance was conducted by Mendelssohn himself in 1846. Since then other works destined to produce a lasting fame for their authors have been brought out here. Copies of the programmes for the present year with all arrangements can be obtained from the committee at the town hall.

The "Long Pull" Question.

The general opinion is that the "long pull" in the beer trade is a pernicious habit, that it leads to unfair competition, and that it tends to the increase of drunkenness. The question is complicated much by the attitude of the wholesale trade and the fact of what are called free licences. It would appear from the variety of conflicting points introduced at the licensing sessions that some attempts have been made to influence the decisions of the Bench. To outsiders who hear that the "long pull" is, or should be, limited to 25 per cent. over-measure, some impression must be conveyed of the profits which admit of this liberal measure and yet leave sufficient to cover all the expenses of which the trade complains.

Plague Precautions.

That the authorities are actuated by a desire to prevent as well as to cure is evidenced by the fact that the medical officer of health of the city has been notified by the medical officer of health of Glasgow of a Birmingham gentleman who travelled from Glasgow to Greenwich in the steamship *Copeland* and then proceeded home to this city. He will be kept under strict but unobtrusive notice so as to ensure every precaution should he be the means of spreading the disease.

Sept. 18th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Out-door Relief.

IT may, no doubt, be taken as a sign of the increasingly humanitarian feeling of the times that boards of guardians are less rigid than they used to be as to granting out-door relief as an alternative to the offer of "the house," and if the practice is sufficiently safeguarded with respect to abuse there seems to be no good reason against an extension of it. At all events this seems to be the feeling at the Salford board, for at the meeting held on Sept. 14th the attention was drawn to the question by one of the guardians asking for an explanation of the increase in out-door relief, "especially in view of the present state of trade and the favourable weather." The explanation was that "the general disposition nowadays both by boards of guardians and the public was in favour of giving a little more out-relief." Three years ago the amount distributed per week was £115 and it has increased to £140.

The Cancer Pavilion and Home.

Mr. F. A. Southam and Mr. G. A. Wright have accepted appointments as honorary surgeons to the Manchester Cancer Pavilion and Home.

Registration Difficulties in Fallowfield.

Some inconvenience is felt at Fallowfield, a rapidly increasing suburb of Manchester, as to the registration of births and deaths. A new and populous district is attached most inconveniently to Ardwick which is not easily accessible, while the attendance at the branch office in Rusholme is very meagre. The matter was brought to the notice of the Chorlton board of guardians on Sept. 14th by a letter from Dr. W. E. Sawers Scott suggesting that "the increase of population warranted a readjustment and increase of the number of districts." The clerk said he would "ascertain from the registrar whether more attendance could not be given at the Rusholme branch office." All reasonable facilities should certainly be afforded for registration.

Preservatives in Milk.

A milk-seller was charged the other week before the Bolton county justices by the Lancashire County Council with selling adulterated milk. Mr. Wilson of Preston, who appeared for the council, said that they desired to give the utmost publicity to the case, "which had been brought to put a stop to the growing practice in Lancashire of putting preservatives in milk." It seems that the sale of such things is being actively pushed among the farmers by agents selling formalin and other preparations. Part of a pint of new milk bought by the police was sent for analysis and found to contain formalin, the amount of which could not,

however, be ascertained by the methods at present in use. Dr. Collingwood Williams, one of the county analysts, spoke to analysing and detecting formalin, which was a powerful preservative, which was very pungent and irritating, and which made the milk less digestible. Mr. E. Sargeant, medical officer of health for the county, objected to the use of any preservative in milk. He thought formalin specially dangerous, particularly in the hands of inexperienced people. "It retarded digestion and was specially injurious to young people." The defendant said that a man from Rochdale called on him and sold him a small bottle of the preservative which was called "lacticine," for which he paid 2*s.* 9*d.* He used 10 drops of it, less than the quantity directed, to 40 quarts of milk. There was a thunderstorm at the time and he was afraid that the milk would not keep through the night. He gave up the bottle to the police. The presiding magistrate said that as the defendant "had helped them all he could" he would only be fined 10*s.* and costs. There is no wonder that farmers should wish to save so readily decomposing a substance as milk from being spoiled and it would be well if county council agricultural lecturers would give instructions as to the best ways of dealing with it from the moment it is received into the milking-pail until its delivery to the consumer, not forgetting to inculcate the cleanliness of hands and udder so often considered unnecessary by the rustic mind.

Ice-cream Manufacture.

The manufacture of ice-cream for sale in the streets is a matter engaging the attention of the corporations both of Manchester and Salford. It is chiefly in the hands of poor Italians who are careless and ignorant as to points of hygiene and generally too poverty-stricken to be able to conduct their work on suitable premises. At the Manchester city police-court Carolina Fuska was summoned by the Sanitary Committee of the corporation and fined 5*s.* and costs "for storing ice-cream on her premises without taking proper precautions for protecting it from infection or contamination." Victor Crolla was also fined 5*s.* and costs "for manufacturing ice-cream in a place which was in a dirty condition." These were the first prosecutions of the kind in the city, and the presiding magistrate said that in future more severe penalties might be imposed. At the meeting of the Salford council the other week it was said that the question as to the regulation of ice-cream vendors would come up at the next meeting of the Watch Committee. One of the members stated that it was not possible to license the ice-cream vendors. They had tried to get powers in their Act of 1899, but the matter was struck out of their Bill.

Sept. 18th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Workmen's Dwellings and the Demolition of Insanitary Property.

THE re-housing of the poor who have been dispossessed of their tenements owing to the demolition of insanitary property continues to be a source of anxiety to the Insanitary Property Committee of the City Council. An outcry has been raised against the hardship inflicted upon tenants through their being dispossessed of their holdings without means being taken to provide them with more suitable dwellings. The matter is now engaging the attention of the committee insomuch that the city surveyor has been instructed to report how far tenants of municipal dwellings lived from their work. There can be no doubt that the introduction of electric tramways throughout the city minimises the hardship imposed upon workmen in having to reside at a distance from their occupations, as the city is quickly approached from any point at a cheap rate. A special meeting of the City Council was held at the town hall on Sept. 13th to consider a recommendation of the Insanitary Property Committee—

That powers be obtained by provisional order or Act of Parliament to borrow a sum of £200,000 to enable the council to purchase and demolish insanitary houses under the provisions of the Liverpool Sanitary Amendment Act, 1864.

The recommendation was carried by a substantial majority, an amendment reducing the amount to £50,000 having been previously defeated.

Civic Grant to the Hospital Pavilion at Fazakerley.

The City Council at their meeting on Sept. 13th resolved that £4000 should be placed at the disposal of the Port Sanitary and Hospital Committee for furnishing the hospital pavilion on the Warbreck House estate at Fazakerley.

The Inter-parochial Hospital for Tuberculosis.

The final stage in the matter of the proposed inter-parochial hospital for the treatment of tuberculosis has now been reached. The joint parochial committee of the three unions —Liverpool, West Derby, and Toxteth Park—have given instructions to the architect to proceed with the erection of the hospital at Heswell on the site alluded to in THE LANCET of July 21st (p. 223), at a cost not exceeding £5700.

The Roentgen Rays at the Liverpool Workhouse.

The introduction into the workhouse hospital of the apparatus for applying the Roentgen rays affords proof of the intelligent interest taken by the Select Vestry in the treatment of the sick poor of the parish of Liverpool. The hospital contains a fine operating theatre and a post-mortem room fully equipped. Dr. W. Alexander is to be congratulated upon the numerous improvements initiated by him in recent years and upon having made the most of a building which by comparison with other general hospitals throughout the city was fast becoming out of date.

The Plague in Foreign Ports.

The Town Clerk of Liverpool has sent out notices that the Health Committee have decided to put in force the provisions of the Infectious Diseases Notification Act for one month from the date of the notice in the case of bubonic plague, should it unfortunately gain access to the port of Liverpool. The Select Vestry are also taking precautions against the plague in the establishment of an isolation ward in the Liverpool Workhouse.

The Outbreak of Anthrax in Cheshire.

A further outbreak of anthrax has occurred in another farm a short distance from that recently affected at Cuddington, near Northwich. Two more cattle have died, and the farm has been declared an infected area by the veterinary inspector to the Cheshire County Council.

University College: Election of a Professor of Physics.

Mr. L. R. Wilberforce, M.A., of Trinity College, Cambridge, has been elected to the Chair of Physics vacated by the appointment of Dr. Oliver Lodge to the principalship of Birmingham University. Mr. Wilberforce succeeded Mr. Glazebrook, the late principal of University College, as demonstrator in physics at the Cavendish Laboratory, Cambridge, and was recently appointed University lecturer in physics. He is now the secretary of the Special Board of Studies for Physics and Chemistry at Cambridge. Mr. Wilberforce has the reputation of being a most successful teacher.

Donation to the Bootle Borough Hospital.

The treasurer of the Bootle Borough Hospital has received £1000 from the executors of the late Mr. John Harling, of Manchester and Southport.

The Royal Alexandra Children's Hospital, Rhyl: Opening Ceremony.

The fine pile of buildings on the marine drive, Rhyl, known as the Royal Alexandra Children's Convalescent Hospital, was formally opened on Sept. 14th by the Countess of Dundonald. The foundation-stone of the new building was laid by Her Royal Highness the Princess of Wales on the site of the old hospital, then situated on the promenade; but in response to the wishes of the town council it was decided to remove the hospital to a new site further east. The new site has an uninterrupted sea frontage of 265 feet, comprising two acres of ground. When complete the building will contain 160 beds as well as accommodation for 25 nurses, many of whom will be engaged in work outside the hospital. The late Duke of Westminster contributed £10,000 towards the cost of the building. Messrs. Waterhouse and Son of London are the architects.

Sept. 18th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Public Health in Dublin.

A SPECIAL meeting of the corporation of Dublin was held at the City Hall on Sept. 14th in order to declare bubonic

plague a notifiable disease for a period of 12 months. Mr. Bergin, chairman of the Public Health Committee, proposed a motion to that effect which was passed. A long discussion was held as to the best place in which such cases might be isolated for treatment. At its conclusion it was ascertained that the Convalescent Home in connexion with Cork-street Fever Hospital, Benevan, was really more suitable for many reasons than the accommodation at the Pigeon House Fort, for the 24 beds now available at Benevan could easily, if necessary, be increased to 100, while the alterations now being made at the Pigeon House Fort rendered such an extension there impossible for many months. A resolution to the effect that any patients suffering from bubonic plague in Dublin should at once be sent to Benevan was passed. Referring to the objection raised by some of the residents in that neighbourhood the chairman of the Public Health Committee called attention to the fact that Benevan had been for years used as an isolation hospital for diseases of a much more infectious nature than bubonic plague. Quoting from a recent memorandum of the Royal College of Physicians of Ireland he said: "It is reassuring to know that the plague although 'catching' is not nearly so infectious as scariatina, typhus, small-pox, or measles. Attendants on the sick in clean, roomy, airy hospital wards run little risk." He added that in view of that statement there need be no apprehension on the part of the people at Benevan.—Dr. John J. Cranny addressed a letter to the *Irish Times* of Sept. 17th calling attention to the frequency of wakes in Dublin and to the fact that the epidemic of plague in Glasgow has been traced to this cause. He suggests as a practical remedy that mortuary chapels where the bodies of the dead could be placed during the interval between death and burial should be attached to the churches in every parish and be under the care of the different ministers of religion.

The Irish Hospital at Pretoria.

Lord Iveagh received a telegram on Sept. 17th from Sir William Thomson which was dated Sept. 15th and stated that all were well.

Royal Army Medical Corps.

The Secretary of State for War has recently placed nominations to commissions in the Royal Army Medical Corps at the disposal of the Royal College of Surgeons in Ireland and the Medical School of the Catholic University.

Meat Inspection.

At a meeting of the Market Committee of the Belfast County Council, held on Sept. 15th, a very valuable report was submitted by Dr. Henry O'Neill, J.P., who is a member of the Belfast Council and was appointed by that body to represent them at the Conference on the Housing of the Working Classes held in connexion with the Sanitary Institute in London in July last and at the Congress of Hygiene and Demography held in Paris in August. He was requested to obtain information concerning the housing of the working classes, the inspection of meat-supply, and the inspection of the milk-supply of cities and towns and its municipal control. Dr. O'Neill, besides attending the Congress of Hygiene and Demography, visited the principal abattoirs and meat markets in Paris, Berlin, London, and Manchester. As might be expected, Dr. O'Neill's report brings out how thoroughly this question of meat inspection is managed in Berlin. All cattle offered for sale in that city must be brought to the public abattoir and the slaughtering of cattle anywhere else within the municipal boundary is absolutely forbidden. All dead meat slaughtered in the country or abroad and intended for human food in Berlin must be brought to the public abattoir and meat market for inspection before being offered for sale as human food, and no butcher in Berlin can offer meat for human food which does not bear the official stamp of the inspecting department of the central market. As a result of this thorough method of inspection as conducted under the control of the municipal corporation of the city of Berlin a person may purchase meat from any butcher's shop in the city and feel certain the meat has been carefully inspected, stamped, and officially declared fit for human food. As showing how effectively this inspection is made in Berlin it is enough to say that the chief inspector of meat is a thoroughly qualified veterinary surgeon who has under his control a large staff of surgeons, assistant surgeons, special inspectors, and stampers. In Paris there are three public abattoirs and no private ones are permitted, and the flesh of the animals, after being killed, is carefully examined by qualified meat inspectors under the superintendence of a veterinary surgeon and if the meat is healthy and good for human consumption each quarter is stamped (a sign to the buyer that it has been examined and passed). Flesh of animals killed outside Paris is called foreign meat, and when brought into the city must be introduced through one of the city toll gates, and the person introducing it has to conform to a series of regulations which are rigidly enforced, one of these being that the meat must be inspected at certain establishments named. If found sound it is also stamped. The great feature of the Berlin method of the inspection of meat is—apart from its thoroughness so characteristic of German organisation—the fact that the city corporation has erected a combined cattle market and public abattoir for the entire city and so there is admirable centralisation. In London the inspection of meat is incomplete, but an improved method is at present under consideration so that all meat brought into London for use by the citizens as human food shall be properly inspected and stamped. Mr. Shirley Murphy has reported to the London County Council fully on the matter and Dr. O'Neill quotes freely from him. In Manchester there is, as in London, not a complete inspection of all meat brought into the city for human food, and the meat which is inspected is not stamped. Dr. O'Neill recommends the Market Committee of Belfast to adopt a system of meat inspection somewhat similar to that of Paris and Berlin, but wisely suggests that before coming to a final decision a small sub-committee of, say, two should visit London, Paris, and Berlin, in order to gain full information not only as regards meat inspection but also as to abattoir construction. This report of Dr. O'Neill, which is full of information of the greatest value and importance, was presented to the Market Committee of the Belfast corporation, and he was cordially thanked for the very great trouble he had taken in the matter. It is also a question for the Public Health Committee of Belfast. It is satisfactory to see that a by-law has been adopted (it will have to be confirmed by the Council) whereby all meat prepared outside and brought into the city must be conveyed to a market to be inspected before being used.

Royal Visit to Belfast.

The Lord Mayor of Belfast has received an official intimation to the effect that His Royal Highness the Prince of Wales will visit Belfast early next year, when on behalf of Her Majesty the Queen he will lay the foundation-stone of the Royal Victoria Hospital. His Royal Highness will be accompanied by H.R.H. the Princess of Wales. The exact date has not yet been fixed but the announcement of the coming visit has occasioned the utmost satisfaction. The new hospital is to commemorate the jubilee of the Queen.

The Bacterial Method of Sewage Purification in Belfast.

There is no subject in State medicine of greater importance at present than the purification of sewage; and it is a very pressing problem in the case of large cities or towns situated either in the interior of a country or along the coast-line. Various methods of sewage treatment have been tried, such as chemical precipitation, sewage irrigation, land filtration, or a combination of these; but with the remarkable growth of the science of bacteriology a new system of sewage treatment depending on bacterial action has arisen, and I purpose to say a few words in reference to a most interesting experiment in this direction which is at present being made at Belfast, and for my information I am largely indebted to a very scientific paper giving a report *re* Sewage Purification by the city surveyor of that place, Mr. J. C. Bretland, M.Inst.C.E. In an Act referring to the Belfast corporation passed in 1899 a clause was inserted making it obligatory to treat in some way the sewage which flows into the Lough, and after a deputation had visited certain towns in England in which bacterial treatment was being tried it was decided at a joint meeting of the improvement and public health committees to instruct the city surveyor to proceed with the construction of experimental bacteria beds in the reclaimed enclosure at the pumping-station where the sewage of over 360,000 inhabitants enters Belfast Lough. The beds, which were put in operation on August 26th, 1899, are open to the air and are four in number, two upper and two lower, the dimensions of each bed being 90 feet long by 72 feet wide at the top, 75 feet long by 57 feet wide at the bottom, with an average depth of three feet one inch. They are contained by earthen banks and to render them watertight are lined with puddled clay 12 inches thick on

which are laid bricks on the flat or old flags to prevent the filling material sinking into the puddle and to form a bed for the effluent drains. The filling material used in three of the beds (one upper and two lower) is broken bricks and in the remaining bed (an upper one) is coke. The beds are arranged at such levels that the upper one is filled from the storage reservoir when the sewage in the latter stands at a depth of at least eight feet six inches, the sewage being conveyed from the reservoir by 12-inch glazed earthenware pipes and distributed over the beds by means of V-shaped wooden troughs (four to each bed) perforated along the sides with three-quarter-inch holes. The effluent from the beds is drawn off at the bottom through ordinary field drains arranged "herring-bone" fashion and leading into nine-inch glazed earthenware pipes laid with open joints and connected with a main effluent discharge-pipe 12 inches in diameter which from the upper beds leads to the distributing troughs of the lower beds, and from the lower beds to the effluent storage space. A gauging well for measuring the capacity of the beds is also provided, as well as means of screening the sewage so as to receive any paper or other fibrous substances which may have found their way into the reservoir. The quantity of matter so passing, however, is very trifling (Report, pp. 2 and 3). With the beds filled four times per 24 hours, the two pairs of beds are capable of treating, by double contact, a quantity of sewage representing a population of about 8800 persons. The effect of this treatment varies with the nature and strength of the sewage, its temperature, and that of the external air, but, broadly speaking, the effluents produced have been satisfactory. A chemical examination showed that the average weights in five examples of screened sewage and effluents were:—

Sewage	... ...	30·64 grains per gallon.
First effluent	... ...	17·37 " "
Second effluent	... ...	3·50 " "

The difference between the first and third weights represents the number of grains per gallon of solid matter which by the method of treatment under consideration is prevented from entering Belfast Lough. This weight, taking the dry weather flow as 10,000,000 gallons per day, amounts to rather more than 17 tons in 24 hours, but besides this a considerable quantity of putrescible matter in solution (23 grains per gallon in the average of the five cases) is converted in the beds into inoffensive inorganic substances. It is a remarkable fact that the removal of this great quantity of solids from the sewage is not attended with the production of a similar weight of sludge. It simply means that the difference of weights of solid matter in the sewage and effluents represents the solid matter which has been, by bacterial action, converted into inodorous and non-putrefactive liquids and gases. It does not remain behind as sludge in the beds. If the beds are worked too long at a stretch there may be sludge, but after a short period of rest it is digested and converted into inorganic substances in solution. There is no sewage smell in the beds. If the filling materials of the beds are dug up and examined there is the characteristic smell of freshly turned earth or garden mould. Half the impurity in the sewage, as a rule, is removed by the upper bed and nearly half the remainder by the lower. Dr. Lorrain Smith's report upon the sewage examined by him shows that the effect of the passage through the first bacteria bed is to deprive the sewage of about 75 per cent. of the bacteria present, while a slight further reduction results from the passage through the second bed. I will here state the change which the sewage has undergone in these bacteria beds as judged by the examination of the effluent. First, to the naked eye it has changed into a clear fluid, in many cases like ordinary drinking-water. 2. Its odour has in many specimens entirely disappeared. 3. Chemically it has been changed from a foul-smelling organic state to a form of inoffensive inorganic salts in solution. 4. The number of bacteria has been reduced in exhausting the pabulum in the sewage on which bacteria can live. It is a most curious fact that the effluent, after being discharged into the effluent storage space, apparently goes on purifying to a further extent, and this power of self-purification (which has been acquired in its passage through the bacteria beds) seems to be inherent in the effluent itself, as shown by the fact that the purification goes on even in a closely stoppered bottle. 5. Fish (the difficulty of keeping gold fish in glass globes is well known) will live in globes containing the effluent from the lower beds; and on July 9th, 1900, when members of the Improvement Committee visited the bacteria beds, they were shown a number of roach swimming in a pond of sewage effluent which had been their home since they were removed a week previously from water in Lord Deramore's park. It is found that in impure water such fish would not live more than 24 hours. The city surveyor of Belfast recommends a scheme of sewage purification for that place based largely on the methods which I have described. The works which he proposes consist of 24 upper open bacteria beds having a total net area of about 35,500 yards and a total net working capacity of about 2,500,000 gallons, together with the same number of similar "lower beds" having practically the same area and working capacity. This would require an area of 26½ acres, of which 17 acres can be found in the existing inclosure, while it is proposed to reclaim the remaining nine and a half acres from the sloblands acquired by the corporation in view of the future treatment of the sewage. Very full details are given in the surveyor's report of this proposed scheme, the initial cost of which would not be lower than £78,000. The total working expenses (two men would probably suffice to look after the beds) would be a mere fraction of the cost of treatment by chemical precipitation, to say nothing of the large initial cost of building construction required in such case. Mr. Bretland has put forward this scheme in his report in an extremely fair, judicial, and scientific spirit, and with great modesty he concludes by suggesting that "as the question is one of very great importance to the ratepayers at large, it is, I believe, desirable that some eminently skilled and independent expert should give his opinion on it before its adoption." Further scientific evidence is desirable on one most important question, and that is the effect of adopting this method of sewage purification on Belfast Lough. Unfortunately, Belfast has a very low-lying situation at the mouth of a tidal river. All the sewage of this large city (365,000 inhabitants) is discharged into the Lough in which the tide ebbs and flows. As a result those who reside on the margins of the Lough for several miles on each side are subject to the most abominable odours due to the presence of a green plant or seaweed (ulva latissima), called "sleech," which luxuriates in the sewage from Belfast discharged into the mouth of the Lough and deposited on its margins by tidal action. In former times this "sleech" was not known to dwellers on the edges of the Lough. It has become luxuriant in modern times *pari passu* with the rapid growth of the city, and the consequent increased sewage thrown into the Lough through the working of the Belfast main drainage scheme of 1887 and perhaps the present more brackish state of the water. Now we know that the sewage has become so purified in the bacteria beds that fish will live in the effluent, what we want to find out is whether the peculiar plant which I have mentioned will grow in this material which contains inorganic salts—the very substances on which vegetable life luxuriates—and whether in its growth in the effluent it will, as is stated occurs at present on the shores of Belfast Lough, exhale sulphuretted hydrogen. There is a little bay near Marino on Belfast Lough where this "sleech" grows profusely and it gives off so much sulphuretted hydrogen that the silver in the adjacent houses is blackened. This experiment of growing the "sleech" in the effluent should be made by the Belfast Public Health Committee. If it gives off sulphuretted hydrogen when grown in the effluent then the "bacterial purification" of the sewage will not do away with the stench on the shores of Belfast Lough. In an appendix to Mr. Bretland's report, Dr. Lorrain Smith, in giving the details of the bacteriological examination which he has made "on the Effect of the Bacteria Beds on the Sewage," says with true scientific caution: "The results given can only be regarded as preliminary." The Public Health Committee of Belfast might well authorise Dr. Lorrain Smith to make further investigation. Since Mr. Bretland's report was written a most important discussion on this question has taken place at the Ipswich meeting of the British Medical Association in the Section of State Medicine, August 1st, 1900. In a very able paper introducing the question Dr. A. C. Houston of London said, basing his results on experiments made for the London County Council in reference to the bacterial treatment of sewage at Crossness, that until positive evidence to the contrary were forthcoming it would be wise to regard the effluents from bacterial beds as no more safe in their possible relation to disease than

crude sewage.[1] Dr. Houston urged that a lesson to be learnt from his experiments is that the element of time or delay is an all-important factor in the problem of sewage purification by bacteria beds. He thinks that it is doubtful if any bacterial process in practical operation at present "treats" or "detains" sufficiently long the sewage to allow of the complete destruction of all pathogenic germs by bacterial agencies. Now it may turn out, on close investigation, that the construction of the bacteria beds at Belfast is different from that of those at Crossness and that there is a difference in the two places as to the length of time during which the sewage is "detained." These are points of the utmost importance and it is advisable that before spending a large sum of money on a great scheme like this—which is, it must be admitted, an experimental one—further and prolonged scientific experiments should be made of a chemical, botanical, and bacteriological nature; a course recommended, indeed, by Mr. Bretland in his extremely able and most interesting report.

Sept. 13th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Physiology of the Cervical Sympathetic in Man.

AT a recent meeting of the Academy of Medicine M. François-Franck read a paper upon some researches of M. Jonnesco and M. Floresco of Bucharest dealing with this subject. By applying to human beings the exact technique which they had employed in their experiments upon animals the Bucharest surgeons have been able to establish for the first time the identity of the immediate effects of section and excitation of the cervical sympathetic in man with those obtained by the same operations in animals. Particularly is this the case with regard to the thyroid circulation and the ocular pressure. M. Jonnesco and M. Floresco maintain besides that their experiments enable them to say that the cervical sympathetic affects the cerebral circulation by acting first as a vaso-constrictor and afterwards as a vaso-dilator. Resection of the nerve does not cause any notable trophic changes in the region supplied by it. Before accepting these conclusions as definite M. François-Franck considers that further experimentation is necessary and that the history of patients in whom partial or complete resection of the nerve has been practised must be followed up for many months.

Hereditary Syphilis in the Second Generation.

M. Fournier laid before the Academy of Medicine two notes of Dr. Lemonnier. The first referred to a case in which diabetes supervened in a little girl who was suffering from hereditary syphilis but who had been cured of this by specific treatment. The second case was an obvious instance of hereditary syphilis being transmitted to the second generation. Two brothers, aged 27 years and 24 years respectively, presented undoubted signs of syphilis, the one showing its effects in the nose and the other in the leg. Neither had been exposed to specific contagion. The father showed signs of syphilis without any history of infection. He was a hereditary syphilitic. The mother was quite free from the disease.

The Beating and Carding of Mattresses.

The Committee of Public Health for the Seine has just recorded its approval of the recommendations contained in a report which has been drawn up by Dr. Josias as regards the beating and carding of mattresses in public places or private roads—if, that is to say, the mattresses have not been previously disinfected. The report states that very often these mattresses come direct from tenements occupied by sick persons and that the result of the operations to which they are submitted is the dispersion of contagious germs. The prefect of police, acting on the resolution of the committee, has urged the commissaries of police to carry out strictly the police order of July, 1862, which forbids the beating of wool or of hair in the public streets. Where there is no court or passage in which this work can be carried out the police commissaries are authorised to prevent it altogether except in such portion of the street as they shall appoint. M. Lepine has also given orders that the police commissaries shall see that any mattress which is to be carded shall be previously disinfected. The commissaries are also to warn carders that all wool with which they work must have been previously stoved.

The Removal of the Cannula after Tracheotomy.

M. Grancher read a paper on behalf of M. Moure of Bordeaux before the Academy of Medicine on this subject. M. Moure has made a study of the various causes which prevent removal of the cannula after tracheotomy. Despite the serum treatment the statistics of Bordeaux for tracheotomy are not good. It is often difficult to remove the cannula as the larynx will not remain permeable. Various reasons have been assigned for this, such as spasm of the glottis, paralysis of the dilators of the larynx, and the presence of fleshy granulations. In some children air will not pass in by the normal way before puberty. M. Moure believes that in such cases the tracheotomy has been done too high. Perichondritis may be a reason for the difficulty of removing the cannula. Whenever the cannula has been in for a long time or the trachea has been divided too high up, there will be difficulty in removing the cannula. The best place for incision is the second or third ring of the trachea. If the incision is longer than this the cannula must be left in for as short a time as possible.

Sept. 18th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Lodge Practice in British Columbia.

ABOUT Dec. 1st last an agreement was entered into amongst all the medical men of the thriving city of Victoria, British Columbia, for the cessation of lodge practice in that city. This agreement was signed by all the practitioners without exception, an act which brought down upon their devoted head the anathemas of the lodge fraternity which comprises upwards of 2000 of the inhabitants. No sooner was this accomplished than the authorities of the lodges advertised for medical men to come to Victoria to do specially the combined lodge work of the city and incidentally to receive the support of the adherents of the societies. It was a stunning blow for them and very gratifying to the practitioners of Victoria that not a single medical man throughout the Dominion of Canada made any response whatever to this appeal. This fact coming to light two of those who signed the agreement immediately contracted with the lodges to do the combined work of all the societies, numbering something like 20, the emoluments running well up to $4000. Their action in thus deserting their *confrères* brought upon themselves prompt dismissal from the Victoria Medical Society. In addition to this the other practitioners of Victoria have refused to consult with either of them, stipulating that if either of the two offenders be attending a case that he be dismissed before they have anything to do with it. It is stated that the members of the lodges are very much exercised over the state of affairs and some hard things are being said against the medical men. Every night the lodge meetings are crowded and excitement is said to run high. So far the practitioners appear to have the best of the fight and it is thought that the two delinquents are sickening of their bargain with the lodges. The daily press has recently been the scene of the most active part of the campaign and each party has placed its views on the subject before the people. It is to be sincerely hoped that the Victoria medical men will stand firmly and steadfastly by their rights and come out in the end more than conquerors.

Maritime Medical Association.

The tenth annual session of this association was held in St. John, New Brunswick, on July 17th and 18th, under the presidency of Dr. James Christie. Mayor Daniel of St. John, himself a past president, welcomed the visitors, making feeling references to the death of the son of one of their respected members, Lieutenant Borden, a third-year student of McGill University, who had fallen on the far South African battlefield. A telegram of condolence was despatched to the Hon. Dr. Borden at Ottawa, conveying the sympathy of the members of the association. Dr. William Bayard, the "father" of the medical profession in St. John, upon whom the honorary degree of LL.D. was recently conferred by the University of

[1] THE LANCET, August 11th, 1900, p. 444.

New Brunswick, delivered an admirable address upon the Prevention of the Spread of Tuberculosis. A paper on Gall-Bladder Surgery was ably presented by Dr. George Armstrong of Montreal, a subject which was further contributed to by Dr. Atherton of Fredericton. A meeting of the McGill graduates in the maritime provinces was also held during the progress of the association meeting, and it was decided to form a Maritime Graduates' Society of McGill University, with Dr. W. H. Hattie of Halifax as first president. The address in gynæcology was delivered by Dr. P. Conroy of Charlottetown, Prince Edward Island, who took for his subject, Retro-displacements. This association, which meets triennially in St. John, Halifax, and Charlottetown, will meet next year in Halifax. Dr. W. S. Muir of Truro, Nova Scotia, was elected President and Dr. G. M. Campbell (Halifax), Secretary.

The Canadian Red Cross Commissioner to South Africa.

Dr. George Stirling Ryerson has returned to Canada from South Africa, where he went as Canadian Red Cross Commissioner. While all England may perhaps be ringing with Mr. Burdett-Coutts's charges against the Army Medical Service in South Africa Dr. Ryerson, similarly to many of our gallant soldiers invalided home, has nothing but praise for the conduct and management of the medical part of the war. Canadians returning from their experience in the Transvaal and fresh from English hospitality express their gratitude for the manner in which they have been treated by the English soldiers and the English people. The small and scattered bands which have been lately arriving have been everywhere met by enthusiastic and admiring crowds and no one has heard a complaint of the hospital arrangements in any particular. Shortly after Dr. Ryerson's arrival in South Africa he was appointed British Commissioner at Lord Roberts's headquarters, where he had unusual facilities for observation. One of his interesting statements is to the effect that Lady Roberts's hospital for the sick and wounded soldiers at Bloemfontein is almost entirely fitted out with supplies furnished by the people of Westmount which is a suburb of the city of Montreal. Dr. Ryerson has given his opinion as to what foundation there was for Mr. Burdett-Coutts's charges, and he declares them to be absolutely incorrect. Mr. Burdett-Coutts had met Dr. Ryerson in South Africa and while there had never made any complaint to the Canadian Commissioner, although he knew that Dr. Ryerson had almost unlimited stores and money at his disposal. Dr. Ryerson states that the hospital arrangements, when one considers the difficulties that had to be surmounted, could not have been more admirable. Canada, as a portion of the British Empire, will be proud of the usage which her volunteers—for they are only volunteers—have received at the hands of the regular army of Great Britain, and of the hospitality extended at home by the English people.

Executive Health Officers of Ontario.

The annual meeting of this association was held at Kingston, Ontario, on August 14th and 15th, with Dr. T. V. Hutchinson (London) as presiding officer. Mr. A. McGill, B.A., analyst to the Inland Revenue Department, Ottawa, read a valuable and timely paper on the Effects of Food Preservatives on Public Health. Dr. Charles Sheard, medical health officer of Toronto, instanced several cases which had come under his notice where young children had been poisoned by re-freezing ice-cream. Dr. Cassidy (Toronto) read a very interesting paper on Tuberculosis and Means for its Cure, dealing particularly with the cheerful aspect of the question, the reported cases of cure. The address of the president was an able review of the Improvements of the Century in Sanitary Science. He condemned the use of bread tickets and paper money as carriers of infection. Dr. P. H. Bryce, secretary of the Provincial Board of Health, contributed a paper on the Education Problem as Viewed from a Public Health Standpoint. He thought that pupils were very often kept in rooms where there was not sufficient air space. He also advocated military exercises for the school-children. Dr. W. T. Connell, pathologist to Queen's University, Kingston, read a paper on Vitality of Typhoid and Diphtheria Bacilli in Milk; and another paper which called forth much and keen discussion was that of Toronto's bacteriologist, Professor Shuttleworth, on the Use of Antitoxin in Toronto Contagious Diseases Hospital. The association unanimously adopted a resolution approving of the legislation in respect to sanatoria for consumptives passed at the last session of the Ontario Parliament, and also called upon the members to coöperate with local boards of health in seeing that these sanatoria were established. Brantford was selected as the next place of meeting. Dr. W. T. Connell was elected president and Dr. P. H. Bryce secretary.

Sept. 1st.

Obituary.

THOMAS MOORE, F.R.C.S. ENG., L.R.C.P. LOND.

THE medical profession has lost a good surgeon and his colleagues a faithful friend by the death of Mr. Thomas Moore, of Lee-terrace, Blackheath, who passed away on Sept. 6th after a few hours' illness while on a visit to Kennington, near Ashford. The deceased gentleman, who was in his sixty-second year, was the second son of the late Mr. Edward Moore of Halesowen, Worcestershire, received his medical education at St. Bartholomew's Hospital, was admitted a Licentiate of the Royal College of Physicians of London in 1865, and obtained the Fellowship of the Royal College of Surgeons of England in 1867. At the time of his death Mr. Moore held the posts of senior surgeon to the Miller Hospital at Greenwich, medical officer of health of Eltham, consulting surgeon to the Brighton Children's Hospital and the Petersfield Cottage Hospital, and treasurer of the Roentgen Ray Society. For the last 20 years Mr. Moore had practised at Blackheath, previously to which he had been at Petersfield, where he founded the Cottage Hospital. Of Mr. Moore it may truly be said that his heart was wholly in his profession and at a time when many men think of "slacking off" and taking a well-earned rest he worked hard at bacteriology and Roentgen rays and made himself proficient in these latter-day sciences. He established a Roentgen ray department at the Miller Hospital which he equipped and superintended till the day of his death. As honorary secretary of the Blackheath Amateur Operatic Society he had been instrumental in raising over £1000 for the Miller Hospital. Mr. Moore was beloved by his patients, rich and poor; he never failed to respond to any call made upon him and he declined to leave his patient until he felt he had done all he could. He was an ex-president of the West Kent Medico-Chirurgical Society, to which he contributed a large number of useful papers. He was also a member of the West Kent Microscopical and Natural History Society. Mr. Moore contributed several papers to THE LANCET, among which may be mentioned a case of poisoning by strychnine treated successfully with tincture of opium and one of lithotomy (published in 1872), one of herniotomy (1874) and one of recovery from rabies (1880).

Medical News.

UNIVERSITY OF DURHAM.—At the Second Examination for the degree of Bachelor in Medicine, held at the College of Medicine, Newcastle-upon-Tyne, in September, the following candidates satisfied the examiners:—

Anatomy, Physiology, and Materia Medica.—First-class Honours: William Henry Peacock, College of Medicine, Newcastle-upon-Tyne. *Second-class Honours:* Auburn Lawrence Wilkinson, Arthur Gibson Dunn, and Daniel Richard Guns, College of Medicine, Newcastle-upon-Tyne; and Margaret Douglas French, London School of Medicine for Women. *Pass List:* Ernest George Annis, M.R.C.S., L.R.C.P., D.P.H., Guy's Hospital; Edmund Howard Barrett, M.R.C.S., L.R.C.P., St. Mary's Hospital; Ambrose Harold Bateman, St. Bartholomew's Hospital; Walter Donald Carruthers, Birmingham University; John Wilfrid Caton, Guy Rowland East, and Arthur Henry Fullerton, College of Medicine, Newcastle-upon-Tyne; Philip Gell Garrett, M.R.C.S., L.R.C.P., D.P.H., Middlesex Hospital; Francis Jollie Gowans, Marshall Haver, and William George Thomas Hepplewhite, College of Medicine, Newcastle-upon-Tyne; William Hughes, Edinburgh School of Medicine; Wharram Henry Lamplough, Birmingham University; Charles Robert Lease, College of Medicine, Newcastle-upon-Tyne; Ernest James Miller, Cooke's School of Anatomy and University College, London; George Edward Victor Morris, Birmingham University; Christie Mûthûswamy-Anthony, Guy's Hospital; Thomasina Georgina Prosser, Frederick William Ritson, and Joseph Collingwood Stewart, College of Medicine, Newcastle-upon-Tyne; Alexander Minter Watts, M.R.C.S., L.R.C.P., University College, London; and John Robert Wylie, College of Medicine, Newcastle-upon-Tyne.

NEW BATHS AT CHELTENHAM.—The new baths erected in Cheltenham by the corporation were formally opened by the Mayoress on Sept. 10th. The cost of the building, which is luxuriously fitted and furnished, is nearly £10,000.

DIPHTHERIA AT PILL.—At the meeting of the Long Ashton (Somerset) Rural District Council, held on Sept. 11th, Mr. Fuller, the medical officer of health, stated that there were at present about 100 cases of diphtheria in the village of Pill.

BRISTOL MEDICAL CHARITIES.—A "collecting dog" at Bristol, known as "Punch No. 2," has during the past six years collected over £100 for the local medical charities. His father, "Punch No. 1," was also a hospital collector, and between them the two dogs have collected 48,579 coins.

POISONING BY FUNGI.—An inquest was held at Devonport on Sept. 13th upon the bodies of two lads, aged 11 and nine years respectively. On Sept. 8th they had partaken of apples, acorns, blackberries, and what they had considered to be mushrooms, and were afterwards taken ill with symptoms of gastric irritation. The younger one died on Sept. 11th and the elder one on the following day. The jury found that the deaths were due to eating noxious fungi.

NEW WATERWORKS AT LILLINGTON.—The ceremony of formally opening the Leamington corporation's recently constructed waterworks at Lillington took place on Sept. 5th in the presence of a large assembly of interested persons. A well has been sunk to the depth of 170 feet and an additional yield of 450 000 gallons per day has been obtained which it is estimated will provide an adequate supply in perpetuity.

OPEN-AIR TREATMENT OF PHTHISIS.—It was reported at the last meeting of the managers of the Poplar and Stepney Sick Asylum district that their proposal to hold a conference of Poor-law administrators for providing accommodation for the open-air treatment of phthisis had been successful, and it was estimated that representatives of about 60 unions and parishes would attend the conference to be held in the ensuing month at the St. Martin's Town-hall, Charing-cross-road, London, W.C.

ROYAL ALBERT HOSPITAL, DEVONPORT.—The managing committee of this hospital has just issued an urgent appeal for subscriptions towards the new buildings which were commenced last May. It is proposed to erect a "nurses' home" and an isolation ward and to make various internal improvements. It is not intended to increase the number of in-patients as the annual income of the institution is at present insufficient to meet the ordinary expenditure. The committee require £5500 and at present only £1519 of this sum have been received.

MEDICAL OFFICERS OF HEALTH AND LOCAL AUTHORITIES.—At the meeting of the Penzance Town Council, held on Sept. 12th, it was decided that the medical officer of health (Mr. R. D. Boase) should be re-appointed for one year only, instead of for three as on former occasions. The member who proposed this new arrangement said "that medical officers of health throughout the country were very much disposed to set aside the authority appointing them and to look to the Local Government Board and county councils as the authority to whom they were responsible." This, he remarked, "was very wrong," and he further added that "if they appointed any officer for a permanent tenure they were appointing not a servant but a master, and this was strongly to be objected to."

BRISTOL GENERAL HOSPITAL.—The half-yearly general meeting of the supporters of this institution was held on Sept. 10th under the presidency of Mr. J. S. Fry. The financial report showed that there was a considerable decrease in donations and also in the collections in places of worship. The legacies had also shown a diminution. The expenditure was less than for the corresponding period of last year. 1222 in-patients had been admitted during the first half of 1900, as compared with 1140 for the corresponding period of 1899. The average daily number of in-patients was 162, as against 170 in the previous year. The chairman stated that large alterations and improvements were contemplated in the out-patient department and added that the committee had also in view the introduction of electric light in the hospital.

DIPHTHERIA IN LEICESTER.—The report of the medical officer of health of the borough of Leicester for the week ending Sept. 15th shows that of 82 fresh cases of infectious disease reported during the week diphtheria claimed 58 and nine deaths.

THE ONTARIO MEDICAL LIBRARY ASSOCIATION.—The thirteenth annual meeting of this association was held in the Library Rooms, Toronto, on June 28th, with Dr. J. F. W. Ross, the president, in the chair. The association approached the legislature of the province recently asking that a grant should be given annually similar to that already extended to the Law Association, and it is gratifying to learn from the president that in the near future this is likely to become a fixture. Books from this library are sent to medical men throughout the province of Ontario on their paying express charges both ways and returning them within two weeks, a privilege secured to the profession at large through the Ontario Medical Council, in whose building in Toronto the library is located. The curator, Dr. N. A. Powell, reported that 161 new volumes and three cases still unopened had been added to the library during the past year. Dr. Powell is a member of the American Association of Librarians and is enabled to secure duplicates from other libraries in exchange. The association has now something like 400 members, practitioners from the city and throughout the province, who contribute an annual fee of $2 00. At a meeting of the board of directors held on July 4th Dr. Ross was re-elected president, Dr. H. J. Hamilton secretary, and Dr. N. A. Powell curator.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BOASE, R. D., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health for Penzance.

BRODRICK, C. C., L.R.C.P., L.R.C.S., Edin., has been re-appointed Medical Officer of Health for Tavistock.

CLARKE, W. J., M.R.C.S., has been appointed Medical Officer for the Second Sanitary District of the Newbury Union, vice M. H. S. Palmer, resigned.

CLEMENGER, A. N., L.S.A., has been appointed Medical Officer and Public Vaccinator for the Slaidburn Sanitary District of the Clitheroe Union.

DAVIES, F. W. S., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Anæsthetist to the Cardiff Infirmary.

DODD, NOEL, L.R.C.P. & S. Edin., has been appointed Junior Assistant House Surgeon to the Stockport Infirmary.

GODSON, J. H., M.B., B.C. Camb., D.P.H., has been re-appointed Medical Officer of Health by the Cheadle and Gatley Urban District Council.

GRUBB, R. T., L.R.C.P. Edin., M.R.C.S., has been re-appointed District Medical Officer, Epping Union.

HALLAM, H., L.R.C.P. Lond., M.R.C.S., has been re-appointed Assistant Medical Officer for Eccleshall Workhouse.

HODGSON, J. F., M.B., Ch.B. Vict., has been appointed Assistant House Surgeon to the Oldham Infirmary.

HOSKINS, W., M.B., C.M. Aberd., has been re-appointed District Medical Officer, Epping Union.

HOUSLEY, J., M.D. St. And., M.R.C.S., D.P.H. Glasg., has been re-appointed Medical Officer of Health for the Rural Sanitary District of Retford.

HOWELLS, J., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Abercrave Collieries, Brecon, vice T. Richards.

PEARCE, GEO. HARPER, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been re-appointed Medical Officer of Health by the Darton Urban District Council.

POTTS, G., L.R.C.P. & S. Edin., has been appointed Second Assistant Medical Officer to the County Asylum, Dorchester, vice C. E. P. Forsythe.

PRATT, ELDON, M.D. Lond., L.R.C.P., M.R.C.S., has been appointed Honorary Anæsthetist to the Cardiff Infirmary.

SOUTHAM, F. A., M.B. Oxon., F.R.C.S. Eng., has been appointed Honorary Surgeon to the Manchester Cancer Pavilion and Home.

STEINHAEUSER, J. R., M.B., B.S. Lond., L.R.C.P., M.R.C.S., has been re-appointed Medical Officer of Health by the Lewes Town Council.

THORMAN, W. H., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer and Public Vaccinator for the Kirkburton Sanitary District, Huddersfield Union, vice W. P. T. Daniel, resigned.

TURNER, G. G., M.B., B.S., M.R.C.S., L.R.C.P., has been appointed Surgical Registrar to the Royal Infirmary, Newcastle-on-Tyne, vice J. D. Wardale, resigned.

WEEKS, C. C., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Metropolitan Borough of Lewisham.

WOOD, C. G. RUSS, M.R.C.S., L.R.C.P. Lond., has been appointed Surgeon to the Eye, Ear, and Throat Hospital for Shropshire and Wales, Shrewsbury, vice W. Charnley, deceased.

WRIGHT, G. A., M.B. Oxon., F.R.C.S. Eng., has been appointed Honorary Surgeon to the Manchester Cancer Pavilion and Home.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRKENHEAD BOROUGH HOSPITAL.—Honorary Surgeon.

BOURNEMOUTH NATIONAL SANATORIUM FOR CONSUMPTION AND DISEASES OF THE CHEST.—Resident Medical Officer. Salary commencing at £10 per working month, board, residence, and washing (no alcohol) provided.

BRADFORD ROYAL INFIRMARY. — Dispensary Surgeon, unmarried. Salary £100 per annum, with board and residence.

CITY HOSPITAL FOR INFECTIOUS DISEASES, Newcastle-upon-Tyne.—Resident Medical Assistant for one year. Salary £60, with board, lodging, and washing.

COUNTY ASYLUM, Chester.—Junior Assistant Medical Officer, unmarried. Salary £130 per annum, rising £10 yearly to £160, with board (no liquors), lodging, and washing.

COUNTY ASYLUM, Lancaster.—Assistant Medical Officer. Commencing salary £125 per annum with the usual allowances.

COUNTY ASYLUM, Mickleover, Derby. — Assistant Medical Officer. Salary commencing at £100 per annum.

COUNTY ASYLUM, Rainhill, near Liverpool.—Assistant Medical Officer, unmarried. Salary commences at £125, with prospect of increase to £250, with furnished apartments, board, attendance, and washing.

DAVID LEWIS NORTHERN HOSPITAL, Liverpool.—Assistant House Surgeon. Salary £70 per annum, with residence and maintenance in the house.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £100, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

DOWN DISTRICT ASYLUM, Downpatrick.—Assistant Medical Officer, unmarried. Salary £100 per annum, with prospects of increase, and furnished apartments, board, washing, and attendance.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY. — Assistant House Surgeon. Board and washing provided.

DUNDEE ROYAL LUNATIC ASYLUM.—Medical Assistant. Salary £100, with board and lodging.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Junior Assistant Medical Officer. Salary £140, rising £10 annually to £160, with board, laundry, and attendance.

FAENCH HOSPITAL AND DISPENSARY, Shaftesbury-avenue, London.—Resident Medical Officer, speaking French, unmarried. Salary £80 a year, with full board.

GUEST HOSPITAL, Dudley. - Assistant House Surgeon for six months. Salary at the rate of £40 per annum, residence, board, and washing.

HORTON INFIRMARY, Banbury.—House Surgeon and Dispenser. Salary £80 per annum, with board and lodging.

HOSPITAL FOR WOMEN, Soho-square, London.—House Physician for six months. Salary £30 for that period.

KENT AND CANTERBURY HOSPITAL. — House Surgeon, unmarried. Salary £100 a year, with board and lodging.

LEEDS UNION.—Assistant Medical Officer for the Workhouse Schools and Infirmary in Beckett-street, Leeds, unmarried. Salary £130 per annum, rising £10 annually to £150, with board, washing, apartments, and attendance (subject to statutory deductions). Apply to the Clerk, Poor-law Offices, East Parade, Leeds.

LIVERPOOL EYE AND EAR INFIRMARY.—House Surgeon. Salary £80, with residence and maintenance.

LIVERPOOL INFIRMARY FOR CHILDREN, Myrtle-street.—House Surgeon. Salary £85 per annum, with board and lodging. Also Assistant House Surgeon for six months. Salary £25 for that period, with board and lodging.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence at the Infirmary.

MANCHESTER HOSPITAL FOR CONSUMPTON AND DISEASES OF THE THROAT AND CHEST.—Resident Medical Officer for the In-patient Department at Bowden, Cheshire. Salary £60 per annum, with board, apartments, and washing.

NEWPORT AND MONMOUTHSHIRE HOSPITAL, Newport, Mon.—House Surgeon. Salary £100 per annum, with board and residence (no stimulants).

NORTH ORMESBY COTTAGE HOSPITAL.—House Surgeon, unmarried, non-resident. Salary £200 per annum. Applications to the Secretary, Royal Exchange, Middlesborough.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-upon-Trent.—House Physician. Salary £100 per annum, increasing £10 per annum conditionally, with furnished apartments, board, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Resident Surgeon for the Hyson Green Branch, unmarried. Salary £200 per annum. Special arrangement as to board, &c.

PADDINGTON.—Assistant to the Medical Superintendent of the Infirmary and Assistant Medical Officer of the Workhouse, unmarried. Salary £100 per annum, rising £10 annually to £120, with board, lodging, and washing. Apply to the Clerk to the Guardians, 289, Harrow-road, W.

PARISH COUNCIL OF KINCARDINE, Ross-shire.—Resident Medical Officer. Salaries offered £52 10s. per annum as Medical Officer. £5 per annum as Vaccinator, with fees in lunacy in addition. Apply to Mr. D. Ross, Inspector of Poor, Ardgay.

PARISH COUNCIL OF TINGWALL, Whiteness and Weisdale.—Medical Officer. Salary £40 per annum, which includes the cost of medicine for paupers belonging to the parish. Apply to the Inspector of Poor, Scalloway, Shetland.

PARISH OF ST. LEONARD, Shoreditch.—Second Assistant Medical Officer at the Infirmary, Hoxton-street, N., for six months. Salary £80 per annum, with rations, washing, and furnished apartments in the Infirmary. Apply to the Clerk to the Guardians, 213, Kingsland-road, N.E.

PLYMOUTH BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £150 per annum, rising £10 annually to £200 per annum, with furnished apartments in the asylum and board and washing.

ROYAL ALBERT HOSPITAL, Devonport.—Assistant House Surgeon, for six months. Salary at the rate of £40 per annum, with board, lodging, and washing.

ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, Dyke-road, Brighton. House Surgeon for twelve months. Salary £80, with board, lodging, and washing. No stimulants.

ROYAL VICTORIA HOSPITAL, Bournemouth.—House Surgeon. Salary £100 per annum, with board.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN, Marylebone-road, London.—Physician to the Out-patient Department.

SCHOOL BOARD FOR LONDON.—Qualified Medical Practitioners to give Lectures in First Aid and Home Nursing to the pupils of the Evening Continuation Schools.

SEAMEN'S HOSPITAL SOCIETY (DREADNOUGHT), Greenwich, S.E.—House Surgeon. Salary £50 per annum, with board, residence, and washing.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon for six months. Honorarium at the rate of £50 per annum, residence, board, and washing provided.

ST. MARY'S HOSPITAL FOR SICK CHILDREN, Plaistow, E.—Honorary Gynæcologist.

STOURBRIDGE DISPENSARY.—House Surgeon and Secretary. Salary £120 a year, rising £5 annually to £130, with furnished rooms, coal and gas, and an allowance of £25 for travelling expenses.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies as Certifying Surgeons under the Factory Acts at Ruthin, in the County of Denbigh; at Hereford, in the County of Hereford; at Hayle, in the County of Cornwall; at Newcastle, in the County of Stafford; at Colne and Nelson, in the County of Lancaster; at Tow Law, in the County of Durham; at Bervie, in the County of Kincardine; and at Beeston, in the County of Nottingham.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence in the hospital.

WOOLWICH UNION.—Assistant Medical Officer, for the Infirmary at Plumstead, unmarried. Salary £120 per annum, rising £10 yearly to £150, with apartments, rations, and washing. Appointment subject to statutory deductions. Apply to the Clerk to the Board, Union Offices, Woolwich.

Births, Marriages, and Deaths.

BIRTHS.

ATKINSON.—On Sept. 11th, at Puddington, Devon, the wife of J. M. Atkinson, M.B. Lond., of Hong-Kong, of a son.

CHURCHOUSE.—On Sept. 12th, at Long Buckby, the wife of W. J. Franklin Churchouse, L.R.C.P., of a son.

LISTER.—On Sept. 16th, at Rose Hill, Totteridge, the wife of W. T. Lister, F.R.C.S., of a son.

MAPLETON.—On Sept. 10th, at Goudhurst, Kent, the wife of G. H. Mapleton, M.B., of a daughter.

MIDDLEMASS.—On Sept. 18th, at Ryhope, Sunderland, the wife of Jas. Middlemass, M.D., F.R.C.P.E., of a son.

NASH.—On Sept. 16th, at Accrington, Mary Monica, the wife of Elwyn H. T. Nash, M.R.C.S., L.R.C.P., of a daughter.

PALEY.—On Sept. 17th, at Brunswick-place, Hove, the wife of F. J. Paley, M.D. Lond., of a son.

MARRIAGES.

EWAN—FERRIER.—On Sept. 12th, at St. Mary's, Castletown, Isle of Man, W. J. S. Ewan, M.B., C.M., son of the Rev. W. Ewan, of F.C. Manse, Fyvie, N.B., to Mary, daughter of the late Canon Ferrier.

GEDDES—KOEK.—On the 13th inst., at St. Edmund's, Sedgefield, J. W. Geddes, M.B., C.M., of the Durham County Asylum, to Ethel Beatrice Marie, youngest daughter of the late E. Koek, Esq., of Singapore.

GODSON—MAYALL.—On Sept. 12th, at St. Thomas's Church, Werneth, Oldham, Alfred Henry Godson, B.A., M.B., B.C. Cantab., F.R.C.S. Eng., eldest son of Alfred Godson, of Cheadle House, Cheadle, Cheshire, to Mary Elizabeth, youngest daughter of the late Samuel Mayall, J.P., of Springside, Lees.

THEOBALDS—LEMPRIERE.—At Saint Mary's Church, Wargrave, on the 13th inst., by the Rev. H. M. Ellis, rector of Exbury (brother-in-law of the bride), assisted by the Rev. A. Austen Leigh, vicar of Wargrave, and the Rev. F. B. Hope, Arthur J. A. Theobalds, M.B., C.M., Gaunt Cottage, Wargrave, to Effie, second daughter of the late Captain Lempriere, South Hampshire Regiment, and of Mrs. Herbert Lempriere, The Croft, Wargrave.

DEATHS.

COPELAND.—On Sept. 16th, at Staindrop, Co. Durham, William Copeland, M.B., C.M. Edin., son of the late William Copeland, M.R.C.S., aged 54 years.

COURTEEN.—On Sept. 17th, at 99, Park End-road, Gloucester, Raymond Courteen, M.B., M.R.C.S., L.R.C.P.

HEWAN.—On Sept. 17th, at 23, George-square, Edinburgh, Ethel Jane, wife of John Hewan, M.R.C.S., L.R.C.P., of Assam, India.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

"A SUBSTITUTE FOR BRANDY."

WE have received a long letter from the friend who gave Mrs. Oliver the prescription for the substitute for brandy. The writer does not wish to disclose her name unless her letter is printed in its entirety, and this we are unable to do, but we subjoin the principal portions thereof.

"Strongest tincture of ginger, sal volatile, and chloric ether—granting that these three drugs are as alcoholised as brandy I still claim that the mixture is a desirable substitute for brandy. For it must be distinctly understood that temperance reformers have no quarrel with the drug alcohol provided it be kept in its proper place side by side with the other poisonous drugs that find their legitimate place in the doctor's dispensary. If alcohol were kept there and simply used as other drugs are used in combating disease there would be no need for temperance societies.

* * * *

And I would urge first our right to protest against being sent to the publican and the wine merchant for our medicine. To say the least, it is a slipshod way of performing an important duty. And its results are often direful. Patients ought not to be subjected to such risks at the hands of their medical advisers. If they need alcohol, why should they not get it in its pure form as rectified spirits of wine made up as a mixture from the chemist; or if there should be any other constituent in these public-house drinks that is considered desirable for the patient, surely the doctor's professional knowledge is sufficient to enable him to prescribe it in some other form. To tell a poor mother to give her ailing daughter gin, or to tell the rich mother to give her child port wine two or three times a day, seems to my lay mind a most unfair way of treating cases, and a most irresponsible and dangerous way. For how does the poor woman know that she is giving her girl, not only alcohol, which comes to have a deadly fascination for her ere long perhaps, but also, it may be, fusel oil, turpentine, or some other horror added? And how does the wealthy mother know what the 'port wine' would reveal, if analysed, or whether it contained even a particle of grape-juice?

"We contend that the 'substitute for brandy' given in the article quoted from is a thousand times better and safer than brandy. It is a medicine pure and simple, kept as such in the medicine-cupboard to resort to *only* in emergencies, whilst 'nips' of brandy may be resorted to on many a plausible occasion when there is no crying need for it, but only a craving for its flavour and transient stimulating effect. And unlimited supplies of brandy can be got at the nearest public-house or licensed grocers, alas!

"I shall continue to give broadcast this 'substitute for brandy' with as much confidence as I gave it to Mrs. Oliver, having tested its efficacy for many years without seeing any evil result of its use."

We give the writer of the above every credit for being perfectly honest in her desire to promote the cause of temperance, but she altogether mistakes the reason why brandy and port wine are ordered. It is not on account of the alcohol which they contain so much as on account of the ethers. Therefore, giving rectified spirit would not in the very least be the same thing as giving old brandy. But we need not pursue this line of argument. Our contention is still the same. The temperance reformer objects to brandy because it is alcoholic and because it can be obtained at any public-house. As a substitute for this she recommends a cordial which has some 80 per cent. of alcohol as against 50 per cent. in brandy, which any chemist will "make up for 6*d.*" and which she will continue to give "broadcast." This, to our minds, is not the line on which temperance reform should go.

UNQUALIFIED ASSISTANTS.

To the Editors of THE LANCET.

SIRS,—In view of the recent regulations regarding unqualified practice and the covering of such by qualified men, I am desirous of knowing if the undermentioned cases are breaches of the regulations of the General Medical Council. X is a qualified man who has during the past two years had a succession of dispensers or unqualified assistants. On August 21st, 1898, the then "assistant" attended a case of midwifery and all the after-attendance was done by him. X, the principal, passed this man off as thoroughly qualified and when he left his service assigned as a reason that Dr. So-and-So was going in for his "Fellowship." During the summer X was asked to visit a case which turned out to be one of a dangerous and infectious nature. On three dates the dispenser or unqualified assistant made all the visits. And Y, a qualified man, made a supplementary visit on the last occasion on behalf of X. X was also sent for to see a patient of another practitioner, but the visit was made by the then "assistant," who was in sole charge of the practice, X being away from home. The man who attended the two latter cases was engaged as a dispenser at a weekly wage of 15*s.* He made visits with the help of X's trap, attended midwifery cases, and consulted in the surgery, as can be easily proved. His predecessors (unqualified assistants) visited patients for Y and Z—qualified men—during their absence from home or when they were ill.

I am, Sirs, yours faithfully,

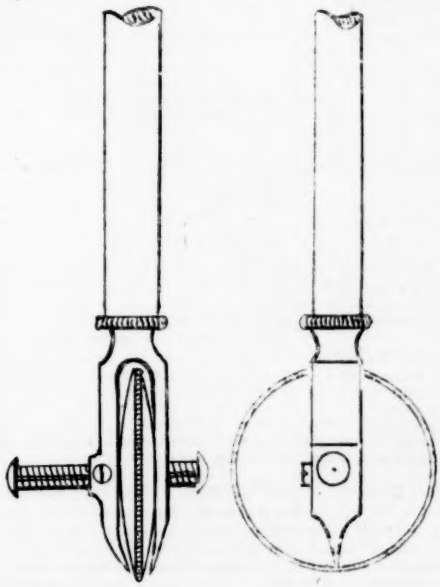
August 20th, 1900. JUSTITIA.

*** The facts as stated constitute "covering," and if they are accurate and were proved against X before the General Medical Council would be very likely to lead to his removal from the Medical Register.—ED. L.

MEASUREMENT OF TUMOURS.

To the Editors of THE LANCET.

SIRS,—The instrument called an opisometer used for measuring distances on maps might be applied by medical men for the measurement of swellings and tumours of various sorts with a view to recording their varying dimensions from time to time. Two small lines might



be marked on the skin with nitrate of silver and the opisometer rolled from one to the other and then rolled back upon an accurate scale. In this way minute alterations of bulk and contour might be recorded. It might also be used in operations on the cranium. The instrument is fully described by W. F. Stanley in his book on drawing instruments.

I am, Sirs, yours faithfully,

Bartholomew Villas, N.W., Sept. 18th. RICHARD INWARDS.

THE PIGMENTATION OF THE FÆCES.

To the Editors of THE LANCET.

SIRS,—I cannot find any mention of the following fact in books of reference. Normal fæcal matter will lie in water without imparting any colour thereto, but sometimes the water rapidly becomes deeply coloured either of a rich yellow or brown tint. Can this pigment be an excess of stercobilin, or is it some other pigment? Has the phenomenon any pathological significance? I should be glad to have the opinion of your readers on the matter.

I am, Sirs, yours faithfully,

Sept. 15th, 1900. F.I.C.

COSMETIC SURGERY.

IN the September number of the *Royal Magazine* is an account of what is called "A Beauty Factory" in the United States, and a correspondent who draws our attention to this article wishes to know if the marvels therein described are limited to the American continent or are also attainable in England. On the whole it may be said that most of the operations referred to in the article are frequently performed in England and we may be permitted to retain a healthy scepticism as to the possibility of some of the others. The article describes the removal of a scar by means of electricity so that no trace of the cicatrix was left. We may be permitted to doubt the possibility of this performance, though there is no difficulty in releasing adherent scars so that they are much less noticeable. No doubt some of the obscurity in the description in the article referred to is due to the fact that the narrator is not a member of the medical profession; for instance, we are told that

"some substance was placed on the bones to cement them together." This occurs in the description of an operation for "building up a nose with a sunken bridge." Even in England dimples can be produced at command, but whether it is justifiable to use a general anæsthetic for such an operation is rather doubtful. In all these cosmetic operations the immediate result is not what has to be considered, but rather the result after a few years, and in no small proportion of the cases the final condition is by no means all that could be desired.

THE SMOKE NUISANCE.

To the Editors of THE LANCET.

SIRS,—Would a medical officer of health be justified in going into court and swearing that smoke issuing from brick-kilns that are situated within 10 and 20 feet of inhabited houses and a large board school was a nuisance injurious to health? and upon what grounds could he (the medical officer of health) prove it?

I am, Sirs, yours faithfully,

Sept. 14th, 1900. X. Y. Z.

*** Nuisance from brick kilns is due to the smoke and sulphurous fumes issuing from the kilns. These fumes are irritating and lead to the closing of windows and thus are prejudicial to the inmates. It must be recollected that for the purpose of abatement an emanation must be a nuisance or injurious to health; it need not be both. Even if injury to health cannot be proved a kiln within the distance stated is probably a nuisance. Such emanations, however, frequently give rise to headache.—ED. L.

EDUCATIONAL AID FOR MEDICAL STUDENTS.

To the Editors of THE LANCET.

SIRS,—I shall be greatly obliged should you kindly inform me through the medium of THE LANCET if there exists in the medical profession a society or some such a body having as its object the granting of pecuniary assistance to deserving men who through no fault of their own may be unable to continue their studies through lack of means, such assistance being, of course, granted on particular terms and after recommendation? Thanking you in anticipation for the favour of your reply in THE LANCET of this week,

I am, Sirs, yours faithfully,

Sept. 16th, 1900. DANIEL.

*** We know of no such society in the medical profession. Tancred's Charity assists students in divinity, law, and physic who are "not capable of obtaining the education without assistance of this or a like charity." Our correspondent might apply for particulars of this charity to Mr. George Edgar Frere, clerk to the Governors and Trustees, 28, Lincoln's Inn-fields, W.C.—ED. L.

THE LIFE ASSURANCE MEDICAL OFFICERS' ASSOCIATION.

To the Editors of THE LANCET.

SIRS,—I am much interested in insurance work and am local referee for some half-a-dozen insurance companies. If you could give me any information about the "Life Assurance Medical Officers' Association" I would esteem it a favour.

I am, Sirs, yours faithfully,

Sept. 12th, 1900. PROVINCIAL.

*** The Life Assurance Medical Officers' Association was founded in 1893. The President is Sir Hermann Weber and the secretary is Dr. H. Mackenzie, 59, Welbeck-street, W.—ED. L.

"A CONVALESCENT HOME FOR UPPER-CLASS CHILDREN."

MR. F. JAFFREY, F.R.C.S. Eng., L.R.C.P. Lond., writes to us in answer to Dr. A. G. Barrs's letter which appeared in THE LANCET of Sept. 15th, giving the address of a convalescent home—Heather Brow, Headly Hill, near Liphook, Hants. The home is kept by Miss Calvert.

A POINT IN DIAGNOSIS.

To the Editors of THE LANCET.

SIRS,—Can any reader of THE LANCET suggest treatment for the following case? A boy, aged 15 years, complains of sneezing in the mornings but at no other times. Local examination of the nose reveals nothing abnormal. I have used the electro-cautery, local applications of cocaine, tonics, &c., but without any effect.

I am, Sirs, yours faithfully,

Sept. 14th, 1900. Q. R. S.

WANTED—A HOME FOR AN EPILEPTIC.

To the Editors of THE LANCET.

SIRS,—I should feel obliged for information as to a home or institution where a clergyman (Roman Catholic) can be accommodated under the following circumstances. He had, I understand, marked epileptiform seizures three and two years respectively, none in the interval. After the first memory was affected slightly—after the second very badly. Since then attacks have been more frequent—every two months or oftener. There is a peculiar post-epileptic condition with marked delusions. He is never violent, never irrational, and knows that what he sees must be creations of his own fancy. He is persuaded, however, that the devil appears to him and means to carry him off. He has an allowance of about £2 weekly. I am, Sirs, yours faithfully,

Sept. 17th, 1900. S.

"THE SCHEDULING OF CARBOLIC ACID."

IN commenting upon the commercial resistance which is being brought forward to prevent the scheduling of acids as poisons a provincial paper remarks that "The National Union of Mineral Water Manufacturers, which represents a numerous body of manufacturers in England and Wales, who are of course the largest organised consumers of carbolic acid, has petitioned the Home Office begging that the official intention may be persisted in." This resolution must surely have related to the fact that carbolic acid was largely sold in ginger-beer bottles, a state of things which rendered the control of the sale of carbolic acid very desirable, rather than to mineral water makers being "the largest organised consumers of carbolic acid." Or did the writer mean carbonic acid?

BOOKS REQUIRED.

To the Editors of THE LANCET.

SIRS,—I shall be much obliged for information as to the best text-books on the following subjects: (1) Practical Physiological Chemistry, and (2) Practical Experimental Physiology. Thanking you in anticipation,

I am, Sirs, yours faithfully,

Sept. 17th, 1900. MALEBRANCHE.

*** A list of books will be found in THE LANCET of Sept. 1st, 1900, under the heading "The Student's Library."—ED. L.

THE QUESTION OF A TRANSFER.

To the Editors of THE LANCET.

SIRS,—I shall be grateful for an opinion on the following points. A and B are partners in a middle-class practice of £2000 a year. A is going to retire and so B is going to take in C on the understanding that he pays two years' purchase of the gross receipts on the average of the last three years. B is to occupy A's house, a large one and associated for 20 years with the practice, while C is to occupy B's house, a smaller one. To what extent should the purchase price be affected (1) by B not occupying A's house but another one of the same rental close by; and (2) by A remaining in the neighbourhood as consulting physician?

I am, Sirs, yours faithfully,

Sept. 18th, 1900. AJAX.

*** Our correspondent should obtain advice from some competent solicitor or agent.—ED. L.

THE RIGHT TO A COCKADE.

To the Editors of THE LANCET.

SIRS,—I am a surgeon-lieutenant in the Volunteers. Is my coachman entitled to have a cockade in virtue of my commission? If so, is there any annual fee to be paid to Government as a tax?

I am, Sirs, yours faithfully,

Sept. 19th, 1900. VERDANT.

*** Anyone holding Her Majesty's commission may use a cockade. It is not an armorial bearing and no tax has to be paid for its use.—ED. L.

Mr. M. F. Cahill.—It is a little difficult to mention any French works on general surgery exactly corresponding to the works to which our correspondent refers, but we may mention as corresponding to the larger work, "Nouveaux Éléments de Pathologie Chirurgicale" (Paris, 1898), by Gross, Rolmer, &c., in two volumes. A very useful book is "Traité de Chirurgie d'Urgence," by Lejars, Paris. A second edition has recently appeared.

Mr. G. Reginald Jones.—The Liverpool Home for Epileptics receives patients at a charge of from 7s. 6d. per week. The honorary secretary is Mr. W. Grisewood, 2, Exchange-street East, Liverpool. We do not know of any free home.

Namron.—If the card is only given to patients on their attending at the surgery we do not think that it could be considered "a form of advertising."

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers, have been received: *Lisburn Standard, Gainsborough Leader, Bradford Observer, Baker's Record, Western Morning News, Leek Times, Blackburn Weekly Standard, Walsall Advertiser, Cambridge Chronicle, Dundee Advertiser, Morning (London), Leeds Mercury, South Wales News, Vegetarian, Birmingham Daily Post, Dublin Daily Express, Lancaster Standard, Liverpool Daily Post, Lancashire Daily Post, Scotsman, Clifton Chronicle, Sheffield Daily Telegraph, Leicester Daily Post, Leamington Spa Courier, Normanton Herald, Times of India, Pioneer Mail, Citizen, Leeds Mercury, Builder, Bristol Mercury, Architect, City Press, Yorkshire Post, Newbury Weekly News, Huddersfield Examiner, Sanitary Record, Hertfordshire Mercury, Liverpool Journal of Commerce, Reading Mercury, St. Andrew's Citizen, Monmouth Beacon, Stamford Guardian, Mining Journal, Newcastle Daily Chronicle, Surrey Advertiser, Cheshire Daily Echo, Local Government Chronicle, Bournemouth Visitors' Directory, Scarborough Post, Leighton Buzzard Reporter, Evening Telegraph (Dublin), Nuneaton Observer, &c., &c.*

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 20th, 1900.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min Temp	Wet Bulb	Dry Bulb	Remarks at 8.30 A.M.
Sept. 14	30·38	S.E.	...	106	67	56	58	61	Overcast
,, 15	30·19	E.	...	104	72	58	59	60	Overcast
,, 16	30·20	E.	...	111	75	60	62	64	Fine
,, 17	30·12	SSW	0·04	107	75	59	61	65	Cloudy
,, 18	30·03	S.		92	71	57	59	60	Foggy
,, 19	30·16	N.W.	0·02	105	71	51	53	55	Fine
,, 20	30·36	WNW	...	102	71	51	53	55	Fine

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (26th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (27th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (29th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (24th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. W. Anderson: Consultation. (Skin.)

TUESDAY (25th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. C. T. Williams: Consultation. (Medical.)

WEDNESDAY (26th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Dr. A. E. Sansom: Clinical Lecture.

THURSDAY (27th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Consultation. (Surgical.)

FRIDAY (28th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. StClair Thomson: Consultation. (Nose and Throat.) 5–7 P.M. Mr. J. Griffith: Class. Practical Ophthalmology. Demonstration I.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1900, which was completed with the issue of June 30th, and the Title-page to the Volume, were given in THE LANCET of July 7th.

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